分　冊

Separate　Volume

出願番号　　　特願２００３−１０２２０７

［ST.10/C］：　［ＪＰ２００３−１０２２０７］

分冊番号　　　　６／９

出証番号　出証特２００４−３０５９６６１

```
tggaagtttg agagaagagc aatgtcagat tattttgctt ggctgtgtga tagcaatggt 1740

tgtattcctc tgccagaaac catgccctcc tgctgggggc tctcttttac ccctatacaa 1800

tcagtctcgg tttcggaaac tactccctct cactgcacct ttcaacctaa ggatgatgat 1860

ggcgtctcct tattgtaagc catagagtgc ttcaacgtct tgtagggttc tttcacactg 1920

ccctccactt tgtaaaaagt ccctccattg gccgggcgcg gcggctcacg cctgtagtcc 1980

cagcactttt ggaggccgag gcgggcggat gacgaggtcg ggagatcggg accttcctgg 2040

ctagcgtggt gaaaccccgt ctctactaga gacgcaagga attagccggg cgtggtggcg 2100

ggtgcctgtg gttccggctg ctcgggaggc tggggcagga gagtggcctg gcccggggag 2160

gcgaagcttg cagtgggctg agatcgcgca attgcactcc agcctgggcg aaacagcgag 2220

actccgactc aaaaaaaaaa gtccctccat taagcactca tattttctg ctggggttct 2280

gatggaccaa gtctatcaaa tgaatgcatc ataatttgtt taaccaatat cttggtgcat 2340

atgttggttt cctatttttc attatgtaaa cagttctttg atgaatctag gtgattttgc 2400

acactttctt gtacatcata ggagacatta ctagaagtgg agttaactga atctgagagt 2460

atgttctttt gtaatttaga gaaaagcgtt cacattactc tcctccgaag ctgtaccaat 2520

ttatagttcc acaaaccgta actgagagta aggattgctc tgggaggctg aggtggtagt 2580

ggatactagc ctgggcccta tagcgagaca ccatctatac aaaaacatta aaaaaagttc 2640

tactactagg gtgtgggaga atgcacctgt ggtcccagct gcttgggagg ctgaggtggg 2700

aggattgcct gagccagggg gttaaggctg cagtgaatta tgattgtgac actgcattcc 2760

agcctgggtg acagagcaag acactgtctc aaaaagacaa aaaaacccac cccaaacaac 2820

caacaaaatt ggaggccatg atttcacacc cagtgatcct aatagctcaa attttgaatt 2880

agagactgtg gttttaacat ctgctaaatt ccttatgttg aggaatcact gagtcaaagg 2940

tttcagcctc tttccaaggg ggagagcacg tggacaatta catctcatgc aggcatttgg 3000

ttttatggac tcacgtgctt gttacaaaac tagacacagc tttagggctt cttattacct 3060

tcccccaccc gtccttggta gaagagtcaa caaatgacat ctaagctgcc aacacatatt 3120

ggaaaatgtt tgaaacttga gatctgtggt ttattatgaa acaggcagtg ccctggagtt 3180

tgaatttttt cccagttggt cttagtaccc tgtctgcaga ttgaggggaa agggcaggaa 3240

ggggagtaaa tgtagttaag agcatagcct cagctgggtg tggtggctca cgcctgtggt 3300

cccagcacat ggatggccg gggagggtgg atcgcttgag gtcacaggtt cgggaccggc 3360

ttggtcagca tggtgaaacc cccgtctcta ctaagaaatg caaaggttag ccaggtgtgg 3420
```

tggtgggtgc ctgtggtcct agctactcgg gaggttgggg cgggagagtc gcttgggcct 3480

gggggggcaga ggtttcagtg agccgggggtt gtgccgctgc attccggcct gggtgacaga 3540

gtgagactgt ctc 3553

<210> 386

<211> 3498

<212> DNA

<213> Homo sapiens

<400> 386

ttttaaactt ttaaaatgta ggatgaagac actgtttgaa gagatcaaag catcaattaa 60

aaataactat aaccaagatc gatcattttg taggcctgtt cttccttggg ggggtgtttt 120

tactatcaaa gctggccgca aagcagtatc ctgtacacca ctctatgttg aaataagact 180

gaaaaatacc tgcaccatag atggattctt gatgttatta tatgtcattc ttaatgaaaa 240

tgaaaacttc cctagggaac tctctcttca ttttggtaga gagtttgtag actgttttct 300

ttacttaatg gacacctaca gttttacaac tgtgaagcta ctttggattt gggacaagat 360

ggaaaaacag caatacaaat ctgaagtcca taaagcttca ttaataattg atttgtttgg 420

gaatgagcat gataatttta caaaaaatct tgaaaatctc atgtctacca ttcaagagag 480

ttactgttcc aactggcgat gcccaactcg agtgcaggag gatcagcagc gcacaattaa 540

tataaatcct ccccaagaaa ttccacatgg aaacttgata agactggctg tgaatgagtt 600

attctgttcc aagattgaac tgtgtgaaga gcatgggtgt ggtggcttaa gagaattttc 660

ccaacgaatt ttctgccatg gggcaccccc ttttgttgtc ttaaatatgc aacattggaa 720

atctgaagat ctggcgtatg taccctatta cttggatttg tctgatcaca agtaggtgtt 780

tttgttgttg tttctttata aaactaataa aaaaaattta tcctgttata ttatgatttt 840

gactagccct taagagatat tgttgaaaac aatcatatct gtctctaaat ttatgtattc 900

tgaatagaat cagaatttat tacagagagt cagttactag cagtgcacat agtgggtagg 960

tgtgtggact acagaataga cagaattggg ttcaaatcct agccccatct tttataagtt 1020

aaccttgggc caacaactta accagtttac atgtcagttt tcttatctat aaaacagaga 1080

tgatggtatc aacctagtgc aattattgta aagacttaat aagcacatac taagtgttta 1140

agatagtacc tgacacataa tactggatag tataataata gcacagtatt ttgtgcctga 1200

cacatactgg ctaatacttg tatttcaagt cagagaagtt cgtagtagta tgcaggtggt 1260

cataatttga acataaaatg ttacttgtca ctataaataa aaatatctgc atacaaatca 1320

ggaaataaag ggttctttta acattttccc tgtaaaagtt ttcttacgtg tttactcttt 1380

tttaaaagaa acatacaggt tataagttca tctgttaaaa tatgttttta agaaattctt 1440

aatttccaca tttccaattt tattacatga tctatagaga tggatatctt tttcagggaa 1500

cagaatacaa acaatgtcaa tgtttttatt ccttagttat gaatttaagg aatgtttatc 1560

ttaacaaagt attaaatttt ctctcatact atattattta atttgcaggt atttgttgga 1620

aggtgccaca ttatttaaca aagaggaaca tcattattct gcagctttcc agattggtgg 1680

acattggatg cactatgatg ggctcagaaa tgtgaattta attttgttaa ataaaccccc 1740

agagtttctc ctcttgtcat cattggttta tattcgagca acagagaaat aaatatagat 1800

tgatgctaaa agttgttttc cctcctgccc atgctctccc agatgaaggg cttttatttt 1860

gtgtatactt ggtatccaag aaaatagttc aactatacta gtttcagaag tgtattttca 1920

gtgtttaacc ccaggtaaat gttttatata gaggatctgt gcaaaaatgt ttgtaatttt 1980

tttatatttc ctgagttatt tttatatgag catattttat gttggaataa aatatatctt 2040

gtggcctttg tattttttat ttatatgtac ctcaaagatt tttacaattc tgtctttgaa 2100

ttcaagaaat actttgtcat ctgaattcta aatttctctt tttggatatt cgagtaaaac 2160

ctaggtaaaa gtattttaag tttatataat ttaacagttc aaaatatatc tgactgtatt 2220

tctttgccct acctcactat aatccaaagt gcactatttg atctagtatg gatttgaatg 2280

tacaatttat cgatggctta gtttattagt tcgatttgcc tagtatccct gcagcaattt 2340

tttaaaatgt ctgagaaatt tttcagagct taaactattt ctttataatg gcaaattact 2400

tttaactact tcctaaagta ttataaacct gccagtggat tttaagtgat agctaagctt 2460

ccaagcttaa ttcacgttat tacaaataaa ttatataact atcttaaatg tttatcttat 2520

aattaaatgt aatttgaaat gctctaatgt attttgcaga taaaacaact ataaacaata 2580

ttaggcaact ggatgtttac tagtgtcgga ctagcaatag aaatgcactt taaatatata 2640

tttaagggga aacgcgtgcc tggaaatact tcttttccta gtgaagtttt atattgacac 2700

agagaaaaga atacttaaaa ttttgagtga tgtctactgg cttccttgta agtagtgatt 2760

gatagcatgc ggctttgact tgcaatacaa atcattacga ttttatagtt atcagaacat 2820

```
tacgtttctt tataaagacc ctaaggtcac tcttcttttt gcaacttaag ggaaaaaata  2880

ttctcaaggg aaaatacttt ttgaaattta tcaccatttt agtgtttaca tttcaataaa  2940

tagttcactt caggtttggg attgagatta gttgcaatat atttagaagc tcctacatga  3000

cagcacagat cactgccatc tgctgaactg ctaaagtgct tggtgccatg ttgagaaaac  3060

ttacccaaga atggataaat atgggtgaaa cattactgag aatgcctcac gttagcaaat  3120

actatgaaaa ttcttgttta tatatcaaac tgatttattt tacaaaaaaa aaaaattcac  3180

cccaagattt atttagtttc ccaagtgtat ctgattagga tttaatttag agtaaacttt  3240

tctggggaca cctgattgca tgaactgaag tatacaataa cacaaatatt acagtaaaca  3300

taaatggtgt cattaacaaa attattccta atgcagattt attctttcag gaaatgcact  3360

ttatttggaa tactagttta tcatgaaaca atgacttacc tacctcacag ggttgttgtg  3420

aggattaaga tgtttgttaa aatcttgact accttgaaca tgctaataaa aaaacatttt  3480

tctacctctt ttatttgc                                                  3498
```

<210> 387

<211> 3872

<212> DNA

<213> Homo sapiens

<400> 387

```
acgcagcctt cgttgcagtc gtcactcgca tctggctacc agctccccgc tgccctgcgc   60

tcggcgggct ggcatcgggc ccggggaaag cggagcagta gttcggtgta gcactgtttg  120

cggcgaggag aaaggaagga gaggagaaaa ctgcactgga tcaaggaggt tagtgtcttc  180

ccataggcct gcagtagggc tgtttaccat tggaagcaag ggaaagagga ggagatcaat  240

ctagaagcat ggagatctgc ctgcatgtct gctgcagggc ttaagatcac tggaagcaaa  300

gaaacaaaga ggagattgct cctgatcagt atagactggt ccagagatct catgaattta  360

tgtatctact ttagggtgta ttgccaagag aagcaagagg agaggaggga actgcctcgg  420

atcattacag gtccacctcc agaggcagct gtagtggcct ttgagtggct gaagaccagc  480

accctcacag gcctacaccc acaactacca ctctctttac cccagcccga gtgcgctcta  540
```

ccataccttg ttcgtgcttt tagcaggggt gattacatgg gccgcattca ggaagtgggc　600

tgggtgactg caggactggt gatctgggct ggcacctgct actacattta caaatttacc　660

aagggaagag cccagagtgt gaggactctt gccagaaatg gatccacagt taagatggag　720

actgtggttg gggtacagag ccagaccttg gccataaatg aagcagagat taagactaaa　780

ccccaagtcg agattggagc agaaactgga gcaagaagtg ggcctggggc tgaagtagag　840

accaaggcca ctgctatagc catacacaga gccaactctc aggccaaggc aatggttggg　900

gcagagccag agactcaatc tgagtccaaa gtggtggctg gaacactggt catgacagag　960

gcagtgactc tgactgaggt caaggccaaa gccagggaag tggccatgaa agaagcagtg　1020

acccaaactg atgctgaggc tggcaaaata gttaagaaag aagcagtgac acagaccaag　1080

gctaaagctt gggcgctggt tgccaagaca gaggccaaga gagaagcaat gacccagacc　1140

aaagctgaaa ctcatatatt ggctgaaaaa gagacagaga ttaacagagt aatggttaca　1200

cagagtgaga ccttggcagt acccagggaa gtggccaaga tggggggccac gaacaagact　1260

ggaattgtgg atgaaaccaa gacaagagct ctggaagaga ctgtgttgat cccaagagca　1320

ttccctagta aaaacgcttc atgctgaact ctatctctgg gcctgcttcc tgggaagcca　1380

acctgcaaca gttggtacaa gaagtggttc gagaaagcaa acactgtgat gaaattttgg　1440

agatgaatca cctgctaccc agctgtcaat gaagactcca tcattggtgg taggtggagt　1500

agataggcct ctggaataag gtagcagagg aattgttaaa attttcaatg gtggttaact　1560

gggttggcat actggtaaaa ggggacacat taactggtgc catgtatcag acctttgaga　1620

aatatgggat atattaaata taaggaaggc cagaaaattg ggcggctgtt gctaagcaga　1680

ttgagctctg gaaaagaata acaaaaagct gaattaaatt aatcaacaat tgaaagctat　1740

gtttgaaagt cagatggctt tattcataac atataaagag gctctcatct tttccaggta　1800

gaaggtggag aaatctgagg agtagactca ggatttgtta aaagcaagct tcaaagaaag　1860

ttaaaattct aaccaagaca agtcttctat gccgagttat gtgccatggt taagaaggaa　1920

tgggactctg acacttggaa tgggggacat ctggattgat gtccctaaaa atcttatatc　1980

cccagattcc cctgagcccc ttgagatgtg tcctactcct ccctattaag ggccggcact　2040

ccatcttgct tcaatatatg gaatcctttc ccctgtaaga taacctgggt ttccctcaga　2100

atctgcccgc acctcctatc ctggccactg ggcctataac tagggttaag ccacgcataa　2160

tctagctggt gatgtgctgg gtgtaataag gaaagaaaga gaatacacca acaaagagtt　2220

tcgggacata acctagccag catatactag aaggtgctga gggagtaagt atggcatcaa　2280

```
attctaagga gcttgatcag gagggctgga atataaactt gaatatggga gaattaatca  2340

atttgaaagt gctttcccag aatacaggat ttaataccct ggagaaaacc acaggaaatg  2400

acacgaactc attactgcga tggctcctcg aagtatggaa aaagccatgg cgtacataaa  2460

gtgaggtgta aatgccagag ttgccataga agatggcggg aaaagggatc aaagactcag  2520

agagacataa aggagaagat ttgggagagg gagaggatta atcctgattt gaactcttcg  2580

aatttgaagt gcttatgtac tatgatttga atatggttta tccccatcca aagtcatgtt  2640

gaggatgggt tcccaatgtg acagtgttgg gaggtggtac ccttaagagg catttgtgtc  2700

atgaggaatc tctcctgatg agggtatgaa tgcagtctct ttggagtggg agagttcttg  2760

tgctcatggg actggattag ttactgtgag gaggttggtt gttataaagt gagtctgcct  2820

cttgtgcttg gtgtcttttg cgtgtacctg tttccccttt tgtttctttg ccatgttttg  2880

atgccctcaa aagaagttgt cggatgtgac tgcccagtct tgaacttccc agccctcaaa  2940

actaacatat cttccagtag cttcctgaga aagtgtatat gcaaagcaca cttctgagat  3000

ctttcagatg gttttgccac attgcccagg atggccttga actcctgggc tcaagtgatc  3060

cacttgcctt ggcccccccaa agtgctggga ttacaggttg ctatgaaaag aaaaatcatg  3120

atattaaatt ttagcatcga tattatggaa gctatgcctg gactcaacaa cacgaacttc  3180

tactcaccaa ggctgatctt gtactaatac taagtgccca acctgacaac agagaagatg  3240

atgagccttt ataagacacc attccttagg ggcatcagcc agtcccatgg tgttaggatt  3300

attacatggg acacctttca tcatcatgaa aacagaaact tttcctcatg gaaatgaata  3360

tgtattttag acacacattt accttctttg ctgacaatga ttctgtcatc accatctcca  3420

tggacttcca gaatgcctta atcatcatca gagtatccta cacaaagttg tctctgacca  3480

aggaactcat ttaatgggac tgcatccccc agactccatt tgtaattgac ttctgcttgg  3540

gtttggtcaa tggaatgccc tggcacagct ttggagggaa gaagagagaa gacaatgtat  3600

ttcttcactg ctcccactct gatttgggct atgttttatt ggcagggact gcatcccttc  3660

aagattttag cttcttccag aagtcccctc ctccatgact ctagctctca ctaggctcca  3720

gaaatactat ttcttcctct tgccctctta ggcctagggt aacagctacc tgctattgct  3780

aacctctggg tgccacaaaa ttgcttgttg ggtctcataa tcttgcatat acctctgtaa  3840

gtagtcccta cattaaagtc ccttgaacca tc                                 3872
```

<210> 388

<211> 3824

<212> DNA

<213> Homo sapiens

<400> 388

agtgctgtat	ctgctggtgc	ctggagagtc	atctgccctg	ggcttccgcg	tcctggtgtg	60
tgcagtgcta	tatctgctgg	tgcctggaga	gtcatctgcc	ctgggcttcc	gcgtcctggt	120
gtgtgcaatg	ctgtatctgc	gggtgcctgg	agagtcatct	gccctgggct	tctgcatcct	180
ggtgtgtgca	gtgctgtatc	tgctggtgcc	tggagtcatc	tgccctgggc	ttctgcgtcc	240
tggtgtgtgc	agtgctgtac	ctgctggtgc	ctggagagtc	atctgccctg	ggcttccgta	300
tcctggtgtg	tgcagtgctg	tatctgctgg	tgcctggaga	gtcatctgcc	ctgggcttcc	360
gcgtcctggt	gtgtgcaatg	ctgtatctgc	gggtgcctgg	agagtcatct	gccctgggct	420
tctgcatcct	ggtgtgtgca	atgctgtatc	tgctggtgcc	tggagtcatc	tgccctgggc	480
ttctgcatcc	tcgtgtgtgc	agtgctgtac	ctgctggtgc	ctggagtcat	ctgccctggg	540
cttctgcatc	ctcgtgtgtg	cagtgctgta	cctgctggtg	cctggagagt	catctgccct	600
gggcttctgc	gttctggtgt	gtgcagtgct	gtatctgctg	gtgcctggag	agtcatctgc	660
cctgggcttc	cgcgtcctgg	tgtgtgcaat	gctgtatctg	ctggtgcctg	gagtcatctt	720
ccctgggctt	ctgcgtcctg	gtgtgtgcag	tgctgtatct	gctggtgcct	ggagagtcat	780
ctgcgctggg	cttccgcgtc	ctggtgtgtg	caatgctgta	tctgctggtg	cctggagagt	840
catctgccct	gggcttccgt	atcctggtgt	gtgcagtgct	gtatctgctg	gtgcctggag	900
agtcatctgc	cctgggcttc	cccgtcctgg	tgtgtgcaat	gctgtatctg	ctggtgcctg	960
gagagtcatc	ttccctcggc	ttctgtgtcc	tggacaagac	atttcaaaga	aagtattaaa	1020
ttcattcacg	agtgccggct	ccgcggtgag	agctgccttg	tacactgcct	ggccggggtc	1080
tccaggagcg	tgacactggt	gatcgcatac	atcatgaccg	tcactgactt	tggctgggag	1140
gatgccctgc	acaccgtgcg	tgctgggaga	tcctgtgcca	accccaacgt	gggcttccag	1200
agacagctcc	aggagtttga	gaagcatgag	gtccatcagt	atcggcagtg	gctgaaggaa	1260
gaatatggag	agagcccttt	gcaggatgca	gaagaagcca	aaaacattct	gggtaaatat	1320
aaggagcaag	ggcgcacaga	gccccagccc	ggcgccaggc	ggtggagcag	ttttccggca	1380

```
ctggctccgc tgacctacga taattatacg acggagacct aacgcaagcg acctgctgcc   1440

ttccttccca ctgcttgtct tcagtgtgcc cggctgggca ggggtgcggt ggtggtggcc   1500

gatgaggaca ggaaagggag atagccaggg cgaggtgggg cgagggctcc ttcccccaag   1560

caacaccgcc cagctctgct ccaggcccct gcactccgcc cacccctacc ctggctgcac   1620

ctgagcttgc tgcccccggg gatgttgccc agtggctgtg cactgctctg tgcacgtgcg   1680

tgtgtgtgag tgcacttgtg tgtgggtgac taagtggatg catgtgtgtg cctgtgtgag   1740

tgagggtatg tgcacctaag tgtgtacatg tgtgtatgtt gtgaaagtgt ctgtgcacat   1800

gaatgtttgt gtgtgtgtga actctttctt actgctggaa gtcacagaat tcatattgct   1860

gcccgggttg gtgtggccac ctttcccttt gtccaagact ccacatggaa ggcatttgag   1920

ctcgacctcc gaaaagctac ccagcaaaga gcagtctgtg cctctgagca gaccgtgaga   1980

actcaggggga cgagtggcta agagcatggc ctctcccaga acccacccag ggtggtgtgg   2040

tgggggcaac aggggccaga ctcctctaga gggagggtgg ctctggggcc ctggaaaacg   2100

tgagagactg ccctgagctg gtccagtggg ccagcacttt ataccaactc agcatttaag   2160

ggaagtatct tagattgcct ccatctcaat gtgaatgcac caggctgagg gttccctagc   2220

gccttgagtc aaggccactt ttcagcccat cgagccctga gttctacttg gtgtttgttc   2280

tctggagctg attgcacttg agctctgtgg tgggcaggcg cactttagcc taagttgggt   2340

gccccagggc accccctcct ctctgctcct tgccagcttc attcactccc agcctctcgc   2400

tgtcctcact ttgcaggggc tcctcctcaa tatttgcatg cacctgcaag aattgggaag   2460

aaagagcatt tattaggcac tgtagcaatt tgcatttta aatgcctgag catttattaa   2520

gcttcttggt attcacttgg gtttgataat tgatctgagc tacctcattg aatgtttttg   2580

gaaaggtgtt ttttggtatg caagtcagct ttgcctcaca gttgaaaatg ttcggtcatg   2640

attgcttttg aaaccaaagg ggaaggtacc gatatcattg agctatttaa agttgccagt   2700

ttgggctcca gtaatgcttt ctggtgggta aaattccaca ttcaggccac gagagcatct   2760

acagtttgta ctctggggct gcaggcatcc tgggacgctg tacgcaattc agtggtctag   2820

tcctttatac cgactcagat tccttaagca tgcagagtca ctcgaatgaa aaaacatact   2880

cgacctctcc ctaaaaagat gttgcaaccc agtttctctg aattccacca caaaaagaga   2940

ccctgaataa gaagagcagt tttcctgtgc atatagaggg tgtgtcaaag gtgagctttt   3000

tggggaccgg gaaaaacaaa gttgcctgat tccgcgcagg tgcacaggcc ccggatgtac   3060

acccggaaag gggagtgtgg ctgtagaatc atccatccgt ctacggctaa aacaatttgc   3120
```

●

```
caataaagta catgtttttc ctaagccaaa aataaatacg ttaacagaaa aatgatttag   3180

gatatagctt gaatgcttaa atatgtgcac ctttacaaac ctctcagtgt attcttggag   3240

ttcttgaaat gttgttttaa tatttgttgc cagtaatgtt ctttcttcac agccgctcca   3300

ggaattctga agttctgggc ctttctcaga agactgtaat gtacctgaag tttctgaaat   3360

attgcaaacc cacagagttt aggctggtgc tgccaaaaag aaaagcaaca tagagtttaa   3420

gtatccagta gtgatttgta aacttgtttt tcatttgaag ctgaatatat acgtagtcat   3480

gtttatgttg agaactaagg atattcttta gcaagagaaa atattttccc cttatcccca   3540

ctgctgtgga ggtttctgta cctcgcttgg atgcctgtaa ggatcccggg agccttgccg   3600

cactgccttg tgggtggctt ggcgctcgtg attgcttcct gtgaacgcct cccaaggacg   3660

agcccagtgt agttgtgtgg cgtgaactct gcccgtgtgt tctcaaattc cccagcttgg   3720

gaaatagccc ttggtgtggg ttttatctct ggtttgtgtt ctccgtggtg gaattgaccg   3780

aaagctctat gttttcgtta ataaagggca acttagccaa gttt              3824
```



```
<210> 389

<211> 4234

<212> DNA

<213> Homo sapiens
```

●

```
<400> 389

tccaaacatc cctgcatctc tgcctcagag cttttgctca aaatatatag tgtgcttcta    60

ttttccttca agattcagct ccagagctac ttccataaaa cttctcaaga tatagcccat   120

taaaattcat ctttttcttc tcatctctat taataatttg gacctcgctt atagcagtta   180

gcacatttac cctgtggtat agttatttgc ctgcatatgt gtatttttga ttataagatt   240

ccatcatttc atgtagttga cactcaatag atgttgactg aattgaatct aaactctctc   300

attttataga tggggaaact ggaatccaga gaggacacga agtgacagag ccaggactaa   360

tttcagggtc ttctgtcttt tgtttcaaca agttccgtc tgcagtagca tgctgacatg    420

catcctatgg atgctcagtg tactgatgtt gggcaattca gtattgtggt gcagaacaaa   480

caccaggtcc catctacaag tcttttatcc atataaaaaa gtacacgtgt tatttgaaat   540
```

ctttgtacat acgaagatta taatgtattt ttattctgtt ttcagcttca tgtttcctgt　600

tgcaggtggg ataagacccc ctcaagcagg cctgatgccg atgcagcaac aaggatttcc　660

tatggtctct gtcatgcagc ctaatatgca aggcattatg ggaatgaatt acagctctca　720

gatgtcccaa ggacctattg ctatgcaggc aggaatacca atgggaccaa tgccagcagc　780

gggaatgcct tacctaggac aagcaccctt cctgggcatg cgtcctccag gcccacagta　840

cactccagac atgcagaagc agtttgccga agagcagcag aaacgatttg aacagcagca　900

aaaactctta gaagaagaaa gaaaaagacg ccagtttgaa gagcagaagc aaaagctcag　960

acttttgagc agtgtgaaac ccaagacagg agagaagagt agagatgatg ctttggaagc　1020

cataaaagga aatttagatg ggttttccag agatgcaaaa atgcacccta ctccagcatc　1080

gcaccccaag aaaccagatt gccccacatc atctcattct actaaaactg tctccccatc　1140

acctgccttt cttgatgaag aagaattcag tgactttatg caggggcctg ttgaagttcc　1200

cccatgtggg ccttcttcca cgtcccagcc ctttcagtct ttccacccct ccaccccact　1260

tggccagttg catacacaga aggctgggac acagcctctc cctccaagtc agagtccagt　1320

gccttttgcc ttacatggcg tccctgggca aattccttac ttctctactg cttcagcctc　1380

acacagtgta ccagaagcag gcccttcctt ggaggagaag ttcctagtat cttgtgatat　1440

aagtacacct gggcaggaac aaattaaatt aaatacttct gaagttggcc acaaagccct　1500

aggcccaggt tccagtaaga agtatcccag tttaatggcc agtaacgggg ttgctgtaga　1560

tggatgtgta agtggtacca ccactgcaga ggcagaaaat acttcagatc aaaacctgtc　1620

aattgaagag agtggtgtgg gagtatttcc ctcacaggat cctgctcagc ccagaatgcc　1680

tccttggatt tacaatgaga gtttggttcc agatgcctat aagaaaatct tagaaaccac　1740

aatgactcca actggaatag atactgccaa actgtatccc attctgatgt catctgggct　1800

tcccagggaa actcttggac agatatgggc cttagctaat cgaactacac ctggcagact　1860

tacaaaagaa gaactttata ccgttctagc catgatagcg gtaacacaga ggggcgttcc　1920

tgcaatgagt cctgatgctt taaaccagtt cccagcagct cctattccaa ctttaagtgg　1980

cttttctatg actctgccta caccggtgag tcagccaact gtgatacctt caggtcctgc　2040

gggctccatg cccctcagcc ttggacagcc agtcatgggc attaaccttg ttggaccagt　2100

gggtggagct gcagcccagg cttctagtgg tttcatacca acctaccctg caaatcaggt　2160

agtaaagcca gaagaagatg acttccagga ttttcaagat gcttctaagt caggatccct　2220

tgatgactca ttcagtgatt tccaagagtt gcctgcttct tcaaaaacaa gtaactccca　2280

```
gcatggaaac aggtagaaaa gagtttaata tatttaacat tgcgtttaac cattaagaaa  2340

gaggcatcca taatagcaag gctaggtgtg agaaatttaa aaattaagac tccttactct  2400

actactttct gtgtttattc cctctgtatt aatactttta cttttcaaac ttctctcccc  2460

tttgtccatc ttaaacttca gctcctactg tttcctgtaa gtacacacct gcctgccaat  2520

attctttttt acctgtgcca aacctttatt atagctaaga tcacctgtgc agtgatgact  2580

tcgtgttcct atattacagc aaggtcttca actgttaaaa agttttttag gcaggagcac  2640

ataattgcac atttttgtaa tgttatgtac tgttgctttt ccacagaatc ataattcaga  2700

actctaatca tattcattca catttcttgt atatttgaca ttagtgtctt ttaagccttc  2760

agatttctgt tgtttgcata gacagctgca taaacatttc tctaaggttt tacacgccac  2820

cttaaccttc aggtacagta actgattcag tatgttgtca gcatgtttag tttttttttg  2880

agatggagtc ttgctctgtc gcccaggctg gagggcagtg gcgtgatctc ggctcactgc  2940

aacctccacc tcccaagttt tcctgcctca gtctccttag tagctgggat tacaggtgtc  3000

caccaccatg cccagctaat tttttgtatt tttagtagag atggggtttc accatttcac  3060

catgttggcc aggctggtct caaactcctg acctcaagtg agtctctcta cttgacctcc  3120

taaagtgcta ggattacagg catgagccac catgcccaga cggcatttta aaaaaagtat  3180

ttagatattt ctgcaaagtg gaacacatca gacaccagag taagcgatat gaattccttt  3240

ggttttattt ttcgaatttg ttattgtcag aatacatatt ccatgtctcc tctgttcctg  3300

tttatgcagt ttcgctcatc tcttcccctt tagccaattg attatctctt agtcagcact  3360

ttgctgcata cacactgtaa caagaactaa gggataggca ttatagagaa ttacaaatta  3420

ggaaaagaga ttattctcct gattttaaaa atatattaaa tgcatgtaca taacatatag  3480

aagaaacata taaggaatgt gaccatagag tgctggtatt tccaggactg ctgcaccaac  3540

acaagttaaa ccttctagac gcataaattg tatttctact tcagatctct tccttcaaac  3600

aaaatttata tgtactactg ctatctaagc atccctatct gaatgagtca aggcacctca  3660

aattcactgc atgaaattac ctttagtgtt ttcctactca aagccacata aaaatgtgtt  3720

aaatcgttat tcccttcctt ggtgaatgat gtcaccatat tcagtcacca aattaaaagc  3780

atgctattta ctttggctct gtcatctctc ctttaccacc attaactctg tcagctctgt  3840

gtgacagtgt gtgatcttaa ctcctgccca ctctcaactc ttgctattcc ccatgactta  3900

cactccagcc ttgccagcat gactccaaac tgaccatgtt ctttcaagct ttatccattc  3960

tgttcgcttc agtctgaaat acccttacct gatctcccta tagttatagt tccatttcag  4020
```

aaatcagcta aatataggaa gttttttccta accaattccc acctcctttg ctactgctgt 4080

agtacctgat gaatgtctgt gccctaattg taattgctgg tttacctgac tgtttccctt 4140

tctaggctgt aagtatctga agacaattat tcatgtttat atatgtagtg cttggcccca 4200

tcatatgtaa ttaataaaga tctgttggat gact 4234

<210> 390

<211> 3778

<212> DNA

<213> Homo sapiens

<400> 390

tgaagaagaa atctcaatgc taggggaaat aacccacctt cagaccatct cggaagatct 60

aaaaagcctg accatggacc ctcacaaact gccctcctca agtgaacagg tgattctgga 120

cttgaaaggt tctgattaca gctggtcgta tcagacgcca ccctcttccc ccagcaccac 180

catgtccaga aagtccagtg tctgcagcag cctgaacagt gtcaacagca gtgactcccg 240

gtccagcggc tcccactcgc attcccccag ctcacattac cgctaccgca gctccaacct 300

ggcccagcag gctcctgtga ggctgtccag cgtgtcctcc catgactcag gattcatatc 360

ccaggatgcc ttccagtcca agtcaccatc ccccatgccg ccagaggccc ccaaccagaa 420

ctcgtccagc tcggcctcct ccgaagcctc ggaaacctgc cagtcagtga gcgagtgcag 480

ctccccccacc tctgtcagct cgggctccac catgggtgcc tgggtgtcca cagagaagga 540

ctgggctaag cctgggccct atgaccagcc tctggtgaac accctgcagc gccgcaaaga 600

gaagcgagaa ccggacccca acgggggagg acccactacc gccagcggcc cacctgcagc 660

agctgaggag gctcagagac cacggagcat gactgtatcg gctgccacca ggcctggtga 720

ggagatggag gcttgtgagg agctggccct ggccctgtct cggggcctgc agctggacac 780

ccagaggagc agccgggact cgcttcagtg ctccagcggc tacagcaccc agacaaccac 840

cccctgctgc tctgaggaca ccatcccttc ccaagtttca gattatgatt atttctctgt 900

aagtggtgac caggaggcag atcagcagga gttcgacaag tcctccacca ttccaagaaa 960

cagcgacatc agccagtcct accgacggat gttccaagcc aagcgtccag cctcaactgc 1020

tggcctcccc accaccctgg gacctgctat ggtcactcca ggggttgcaa ctatccgacg 1080

gaccccttcc accaagcctt ctgtccgccg gggaaccatt ggagctggtc ccatccccac 1140

caagacaccc gtgatccctg tcaagacccc aaccgtccca gacctcccag gggtgttgcc 1200

agcccctcca gatgggccag aagagcgggg ggagcacagc cctgagtcgc catctgtggg 1260

tgagggcccc caaggtgtca ccagcatgcc ctcctcaatg tggagcggcc aagcttccgt 1320

taaccctcca cttccaggcc cgaagcccag tatccctgag gagcacagac aggcaattcc 1380

agaaagtgaa gctgaagacc aggaacggga accccaagt gccactgtct ccccaggcca 1440

gattccagag agtgaccctg cagacctgag cccaagggat actccacaag gagaagacat 1500

gctgaacgcc atccgaaggg gcgtgaaact gaagaagacc acgacaaacg atcgctcagc 1560

ccctcgcttt tcttaggttc acaagaaatg cgccggtggg gaatgaactg tttcattaat 1620

aaaacctaat ttgtcttgat ccattccact ctataataaa acaaaagatt ttgtaggcaa 1680

ctcggaatat agctcttttg aaagtactcg acacctttag ataagaatta aaaccaacct 1740

atgtaactga cataatcttg atcttttaat ttgtaaatat tgacaatttt ctttctgcac 1800

attttaatct tagtttccct tttgattttt ctgaaggtgc caaattccat ttaacttttt 1860

tacaagtctt tgtaaaattt taaatgcata aaggggggttg gggcaggggga accacgaagt 1920

agttaatttt agaaaaggat ttactatact tcactcttct ttttttttcc ccacaagctt 1980

ttgtagatgc attgtagtag tctagcttag aagcaaatgc aagttatttt aatgtacaaa 2040

ctaaatgggt aagaggtaaa atcttcattt aaatatacta tgttctggat gaaaagagca 2100

ggagtaacaa ttgatgagca atattcagag tgaagtaaat ctggaaatgg tagactgtgt 2160

tgggattggg gggagggcca tgggaggggt acatcgtcaa catagccgat cctgttacat 2220

ttaagagtag cctcgtaggt tgaatttctt ctggtagctt catggtaaat gcatccgaat 2280

aagccatact ggattgcagt gtttgtttct gtagggtgtt taaggacttg acttccttc 2340

tcccatgatt cctctggact gcacacagca cccacaacca gccccatgca tgctgctgcc 2400

tctgggcagt cgtagaatct cccacttcag tttctcgttg attgtactca cctttatgga 2460

atccaaatac atccaaaagg gtaaggcagt tttaaaaatg tgaaacatt taaaaatgat 2520

aatagcaggg aattcttaga ttatagtaaa tgccttttac ttaactgtgc ccagcaggct 2580

gggtgcgtta aaaagcccaa gtattttgaa aaaactcgaa cagatttgac aagggtagcc 2640

agcttggagt ctagcaactt gccaatgtgt ttaccaatct gggggcttgt ttttctttc 2700

ttctttcaaa taaatggcag ttaactggct ttacagtaaa cattgaagag aggaggattt 2760

gtttattgtc actgggaatc tgaccactat actgtccttt ttttgtattc tgggtaaatg 2820

tttttggaa aagatttgtc ttttctaagt ggaagttaaa tttgttatac tgcccatccc 2880

ctaaagccaa cagagatttg tagatttaaa gggatcacat ttgaagacaa tagtgtttaa 2940

gaaagcaagc aagtccctta gcagtcaggt cataacaggg cacatttctg accgaaccct 3000

ctcaaggcag aggaggagtt tggtgggttt catacaccct gcagattcct gttggctcta 3060

accctcaatt acctaatctt atgctttaac acataactgc attggatgtg agagtaacgt 3120

accgtatggt cattgttcta tatattaaca ttgaacactg ctgcgattgc tcaaggacat 3180

tttatgttac ggctttaaag caaaggcatg attattagaa actatttaag cttttttctt 3240

tgaaaaacaa gctccttta cagaatataa acaacagtag tgcctgtggt ttagcccacc 3300

aatcttgatg actaaaagta gctgatgcat tgtgcatatg atgcttgaga tggttttttgc 3360

aaaagcagaa atcgctgcaa ggtaatcaca atagataaaa gtggtatttt aaacctttga 3420

aataaatgga tgtaactgta ccttggtaca gcttttcact tgtttagttt ttaaacgtta 3480

gtataatctg aataaataaa atgttgccaa attcaatgta gaaagaatgt gacaacacac 3540

cttgggtagt tctgcttgtg tttttgcata ttgtaaaagc agtgtcacag ctaaaaagaa 3600

agaaatcgtt tctaacagta aattattgtg ctttagttgc tagtttgtac tgagagttga 3660

cctctccctg tgcagttttt tgttctaaac ttgtataaat aacaattgtg taatgtgtct 3720

ccctcctaca ttgtaacaat tgcttcagcc tacgttataa ataaagaacc actagatt   3778

<210> 391

<211> 3531

<212> DNA

<213> Homo sapiens

<400> 391

gatgtgatag ctctatggaa gtccaaactg gagactgcca tcgcatccca ccagcaggcg   60

atggaagaac tgaaggtatc tttcagcaaa gggcttggaa cagagacggc agaatttgct   120

gaactaaaaa cacaaataga gaaaatgaga ctagattacc aacacgaaat agaaaatttg   180

cagaatcaac aagactctga acgggctgcc catgctaaag agatggaagc cttgagggct   240

aaactgatga aagttattaa agaaaaggaa aacagtctgg aagccatcag gtcgaaactg   300

gacaaagcag aagaccagca tctcgtagaa atggaagaca cgttaaacaa attacaggaa   360

gctgaaataa agaaagaaaa gtttgctgaa gcttcagagg aggcagtctc tgttcagaga   420

agtatgcaag aaactgtaaa taagttacac caaaaggagg aacagtttaa catgctgtct   480

tctgacttgg agaagctgag agaaaactta gcagatatgg aggcaaaatt tagagagaaa   540

gatgagagag aagagcagct gataaaggca aaggaaaaac tggaaaatga cattgcagaa   600

ataatgaaga tgtcaggaga taactcttct cagctgacaa aaatgaacga tgaattacgt   660

ctgaaagaaa gagatgtaga agaattacag ctaaaactta caaaggctaa tgaaaatgca   720

agttttctgc aaaaaaagta ttgaggacat gactgtcaaa gctgaacaga gccagcaaga   780

agcagctaaa aagcatgagg aagaaaagaa agaattggag aggaaattgt cggacctgga   840

aaagaaaatg gaaacaagcc acaaccagtg tcaggagctg aaagccaggt atgagagagc   900

cacttctgag acaaaaacca agcatgaaga aatcctacag aacctccaga agacgctgct   960

ggacacagag gacaagctga agggcgcacg ggaggagaac agtggcttgc tgcaggagct   1020

ggaggagctg agaaagcaag ccgacaaagc caaagctgct caaacagcgg aagatgccat   1080

gcagataatg gaacagatga ccaaagagaa gactgagact ctggcctcct tggaggacac   1140

caagcaaaca aatgcaaaac tacagaatga attggacaca cttaaagaaa acaacttgaa   1200

aaatgtggaa gagctgaaca aatcaaaaga actcctgact gtagagaatc aaaaaatgga   1260

agaatttagg aaagaaatag aaaccctaaa gcaggcagca gctcagaagt cccagcagct   1320

ttcagcgttg caagaagaga acgttaaact tgctgaggag ctggggagaa gcagggacga   1380

agtcacaagt catcaaaagc tggaagaaga aagatctgtg ctcaataatc agttgttaga   1440

aatgaaaaaa agagaatcca agttcataaa agacgcagat gaagagaaag cttccttgca   1500

gaaatccatc agtataacta gtgccttact cacagaaaag gatgccgagc tggagaaact   1560

gagaaatgag gtcacagtgc tcaggggaga aaacgcctct gccaagtcct tgcattcagt   1620

tgttcagact ctagagtctg ataaggtgaa gctcgagctc aaggtaaaga acttggagct   1680

tcaactcaaa gaaaacaaga ggcagctcag cagctcctca ggtaatacag acactcaggc   1740

agacgaggat gaaagagccc aggagagtca gcaaatgatt gatttcctaa attcagtaat   1800

agtggacctt caaaggaaga atcaagacct caagatgaag gtggagatga tgtcagaagc   1860

agccctgaat gggaacgggg atgacctaaa caattatgac agtgatgatc aggagaaaca   1920

gtccaagaag aaacctcgcc tcttctgtga catttgtgac tgctttgatc tccacgacac   1980

```
agaggattgt cctacccagg cacagatgtc agaggaccct ccccattcca cacaccatgg   2040

cagtcggggt gaggaacgcc catactgtga aatctgtgag atgtttggac actgggccac   2100

caactgcaat gacgacgaaa ccttctgatg aagcctccag tggagaactg ggcttgctca   2160

gacgcactcg cattgacaca acgtaacacc agcattgtgt gtgcagactt caggagaact   2220

catgttattt tttaaccccg tcaacaaatc taggaaaata ttttgatctt caacaaattg   2280

ccctttagtc tccccgtatg agttagaata ataaatattt agtaggtgag ttttcacctc   2340

gaattttgtt ttcttgattt ttacgtttga agacattgca ccagatgcca ttacatttat   2400

tggccccccg accttgtaga aaaacccta ccctcacaat accttattta agtaacttta   2460

aattatgccg ttacttttca tatttgcact aagatatttc caggctgcat ttgtatattt   2520

agattttttg gttaagcttt gacactggaa tgagttgaaa aaatgtgcca ttttgcattt   2580

tcatctactc atttaaagta ttttattctt attcaaagaa atatctgagc tctttgcact   2640

acctgttatc agtagtgcct ttacttcagg cttgataata cttaggtgtg attataaaat   2700

catgaagcag gtaaagggag gggcaagccc ccaaactgct gtggggacat tttataatct   2760

atatgctgca cccacttaat ctactgtggt gttttgttta ttagtttttgc ataatttcag   2820

cttctatata ttgtatgtat atatttttta aaaatctata ttttgggaaa aaaacgtaca   2880

caatgtgtct ttccttttgg acatttacct ttttgaaaaa gaaaacactt aaaatgatca   2940

ttaggacata acagactagg ccagacatag catcttgtgg ctttgcaacc attttcattt   3000

gtttgttttc cttttatttc ttcaccagat ttaaataact ggaggaattt tctccaattt   3060

ttttttcctt ctctggcagg tatccccagc agtcaattaa caataagcca gtataaaaca   3120

cctaaataac caatctacaa tctcccttca caagtttttt tactgttttt agatgaatgt   3180

acgatgagaa attcaacgtt aataattttg gattttctta tcacaaaaaa gaaaatgaag   3240

gacctcaaag cacctgaaca gtttatcgac cagtttgaat ctatttatct tcatttgaat   3300

gtcttctaga atatgtaaaa agtcataaaa tgtatcttcc atgctacatg tacaataaga   3360

acttctataa ttgtatatat gcctttgatg tattttcccc tcaagattat caactgtgtg   3420

ttcgacagtg aatattcaat ctggtaccag ttgaaatttt tggttataaa tgtaatacga   3480

attgtttcac aaacagaaaa catgtaaagc agtattaaaa tttggccaaa c            3531
```

<210> 392

<211> 3679

<212> DNA

<213> Homo sapiens

<400> 392

```
ttgtccatag cactcagaat aaaattgcat atttgcatta tcctgtatat tccaatgaaa    60

tagaatgatt ttagtaccat aatttgtgtt tttatatttt tcttcatctt ataaaagtta   120

atatggtgtg ctttgaaata gcatgatgta aataagggaa gaaagcaact aggaaaaaaa   180

ttattaaaat tgtattcata taacaaattg aaaatagtga catgatgatg actcatcaaa   240

caaaaaagaa aaaagctggt atcacattta cctataacaa ataatggta gaaataactc    300

accttgtgtt tgatatgtat atgtatatat acatttgcac aggtatgcac acaatctatt   360

tcaccaactg ttgtagcaaa gtatttcagt ttttctttta tttaaaaaag gcatatgctt   420

ttacactgaa tatatacata tgcttttaca ctgaatatat aatgcataga tactatctgc   480

ttccaattag gaatgagctc atcacatgca acttaaaggt atagcctcag gaaaatagat   540

gactctccca acacaatccc tttttggaac agcagggcat cagcgtaaga ctatatcgct   600

aaaattcagg cccacagtca gctttaactc aaagcagaca ctgattttat tggttgaata   660

gtatactatt tatagtactt gggcagcaaa atgatgaagc cagtgaaaga atctttctcc   720

ccacaacatt agaactggga ggtgttgatg cttacaagat ccccccccctt gaaggcaaag   780

accatgtctc tcttggatgt gtattcctag ggtattacac agtagctgcc acataatagg   840

taccaaaaaa catcatgact attataaaaa atgctcttta ctactgagtt atagcctaaa   900

ggtctaccat atacattttg tgctgtttct tttcttgatt agggagaaga tccaatttat   960

ccgaactgaa gggactccag gattggtgcg cctttcaagc gatgcagacc ttgttatgtt  1020

gctgaggtac atacgtaaca ctcactcttg aagcagaagg tctcttgtca tcagatatca  1080

tggaacattg tagaaaataa tatgccaata ttcatagcct aaaaattgtt cttattcttt  1140

agacttgtgg aaatattttg aagatttagg gtgctgattg agtgatcatt cacttcacgt  1200

tgccatttgt tacactgaga tctgtttaat tttgtttttca ccctgctggc aagggagatg  1260

gtattggaaa agggaaaggt tgtaatgaat agaatctccc actcacagaa tggaacagaa  1320

gggtatctga acaaggcatc caccgtttac ccctcagtgt ttacccttttc agtttaatat  1380

tctttcaaat gtttttctca aaatatgttt tgttcccctt ttgctgactc aaggcattat  1440
```

```
ttatttacct tgtggttttg agggtgtacg tttgggaaat cagatcagaa agttgacatt  1500

tggtctatgc tactcattgc caacttgata gcccttcata aaactgacca attattttca  1560

cccccgcccc tcaccctcca atggttaaat cagctttggt tttaaatttt agagtagttt  1620

agaaaggaaa ctggcaagtt ttcaaaagac tttctcattt ttttattatc cctcaaatgt  1680

aggcaagcca tagtaaaata atgctttgct ctacccagtg gttgggacgc tcatccctgt  1740

aacctccaga gaattaaaag gaacagcata ctgagccttt caggcaaggt tttgtttatc  1800

cctgagtgct aataacctca ttcaagtatt catgatgatc ttgaccctga ccatttctaa  1860

ttctccattc catagttgcc atatttgttg ccatatttct gacctcccat gtgattgttg  1920

tcagaaaatt attttctttt gtgtgtagtc aaagcataac tcaaagggat atattcactt  1980

tctatagata cttcacttca gttgactctg aataggacct atggtggggg tagcttctca  2040

acctaatggg tggcctctct cctgtggtat tgagccagtt gtgaaaccag catatagtat  2100

gctaggtggt caggaagact actggtcaat taacgttaga gtgtgatgtt tctatcatgg  2160

tttggttggt gataaaatag ttgaagtttc tgttaacaga attctggcca ggatatgctc  2220

tttttcttca ctatagaaag ctaaggtttt tttcttttaa actaagaatt ctgctttggg  2280

aatgagtaaa aacagaagtc ataattatca ttcacctatc catagttaaa taatatttag  2340

atggtatagt cttaaattta ttttactata gcttataata tttgtacttt gataacacaa  2400

cagtttgcat gagtttctat gtgttaagta gtagaattca aatgtatttg aattcaaata  2460

attcagaact cattcataca taaagagcaa ggctgcattt tctcctcttt gggaaaataa  2520

gcaggttctg taaagctaat gggcctttgg agaagtgtga gaaattttct tacatataat  2580

agttctataa ttattgtata caaatgatgt cattaaattc taggcttttc atgtgggtga  2640

tcacatgtgt ttattatttt aataatagta aacaacacaa tgtattatat gtacatgctt  2700

aataagtaat ataattagtg attattgaaa aatttggggt tttattcatg tcctcaatta  2760

tttatttatt tatttttgag gtgcagtctc gctctgttgc ccaggctgga gtgcagtggt  2820

gagatctcat ctcattgcaa cctccgccct ctgggttcgg gtggttctcc tgcctcggcc  2880

tcctgggtgg ctgggagtac gggtgcgggc cgccacgccc ggctaatttt ttgtatttta  2940

atagagacgg ggtttcaccg tgttgcccag gctggacacg agctcctgag ctcaggcaat  3000

ccgccctcct cggcctccca aagtgctggg attacaggtg tgagccacag cgctcagccc  3060

tttatttttt atttcacttt ggaattggaa tgatttgaat tggtgactac aaacttcagt  3120

cagcatactt gtcacttaca taatggaagc ctttgtgtct attttaatgt tttgtctaat  3180
```

ttcttaaaaa ggaaaaatca ctcctggtac aaattgactt atcagtaagc tgcaatgtag   3240

agatagtgtt gctctaggac attattcaat tcagaataaa cgcatgtaaa gttattttcc   3300

aatagggcta tttaaaacc caataatttt taaatgacct tgtttaattt gttattgatt   3360

tttgtatttc atgtatcttt tcactaactc aattcatgta aaaaatatac ctctatcaga   3420

gctcatacaa gaaatgattg ataaatttgg ctacataaat atttttaaat ggatataatg   3480

aaagatacca catataaagg cataaagaaa gataatcaac tggaagaata gatttacaac   3540

atgtaaaaca aagagatcag ccaggcgcag tggctcacgc ctgtggtccc ggcactttgg   3600

gatgccgagg cgggcggatc atgatgaggt cgggagatcg agaccagcct ggccaacatg   3660

gtgaagcccc atctctact   3679

<210> 393

<211> 4768

<212> DNA

<213> Homo sapiens

<400> 393

tgaggaaaca gattcaaaag caagttggga gtgatatctc actagtatat ccctgttgca   60

ctgatgcagc agaacagcca gtgtccttct gattggttgg tgcctaatat aggtagagta   120

aggaaagtta attttaatgt caacttccaa accagtggct ttaaccagta caatgaaaat   180

atccctcact tacccaacaa gcaatgtgga agttccttgt gggcctgcag ccttccttcc   240

atccaaggac ataggcttgg gccctgtcgc tttctgcgtg accccttgca tgcaatcggc   300

agatacgggg agagagaaca tggaaagagc atggaggtgc ccatgagcca ggactcgcat   360

ggagcaccta atttccacca cattttattc acagaatcag ccatgtagca gccgctgact   420

gcaagggaag ctgggaaatg tagtctacct ggtttccctg gaagaaagga aggtggtttt   480

agtgaacaca cagcagtgtc tgccacatga ccatgctgca ttggttatta catatttgaa   540

tatcacccct aggtaaagtc acaaaggtag caagtggcag agccaggagt aggacctagg   600

tctgtgtaac ctcagatctg gattctttgc agggcctctc atactccttt aatggctggc   660

tcaggttctg cacctctgga tgcagtgggt gttgtgattg cctatgtgga ctctctttcc   720

```
aggcaccaac aattctataa aacatgtgac tgctctccct ttcccttcca tggactatct    780

gggctacaaa tttgagagta ggttgttggg aatttttgtg agcagccaac tcaggatcag    840

gtctgtgaag ctcctggctt atgtggtgct cagtggctct cttgggagtg aggggcgata    900

gacaaactgt gtcactctcc ccaggagggc tgggctgtca ttagcattca gcaaggctgt    960

gagtcttgtt gtacaaatca gctgtttaaa ggccttaaaa aaaaaacccc taaaactgct   1020

gaatgcctct cgtggttgaa gctcttatga gtatggagct aacagtttcc cacgactgct   1080

gaacagcaaa aggggagcca tggtgtagtg ttttcctttt gattcatatt tggagtcatt   1140

tttagcaata cggcaaaatg tgaagatgct cttggaatgt gggcatttgt tacctttgac   1200

aaaggagatt gcttgtattt ttgtttgtct gttttggttt ttttctttac agctcttgat   1260

cttgtttatt cagagaagca agaaggatct gttggtttca taaatgtgct tctattcttg   1320

aaaaaatgct agagttagcc acttctcccc ccacttcctc actggtctgt ggcaggagac   1380

tcaagttgca aactaacgca gccccctttc cttcctggct tctccctcca ctcctatggg   1440

ggtcatcagg gggaggggca gagagctaac cagcagagtc caaacacatt atctcttttg   1500

tctgggtttc agagtcagtt tattttcttc catcagttgg gaaggtgatt ctatgcatag   1560

ggattccttg tatgcaatct ttcccaagat agggcttagt gtattgtgcc agctttgact   1620

tcagtcactc tgcttgctga tgcaactgac cctgcttcat caggcctggg caaaaacagg   1680

ccctttttagt agagttctaa tgggcactgc ttgttcgatg gtaattaact gggtattggg   1740

aatttcctcg gttccagatg tctgggagtt agaaacaaat aacatctgtt ctcatcaaaa   1800

ggtagagtgg caaagtacaa atcacaagtc actctcaata aatgcaggag ctggcgtttg   1860

agatccacag tgaagccaga ttacctgttt gcagtactcc tctatggata gaggaaacag   1920

agctaaacat ttcctctgag cctggagctg acctggataa gcctcttctt gcttaacagc   1980

acccctgagt cttcatccag atttgggaag aggatgaggt tggttagcat gctgagtgat   2040

aaggaagaaa aggatactgt ggagcccagc acctgtctga tctagggaga gaattcatga   2100

ctagtagaca gaggccagaa ttgactcgct tcacaggaat caaggtgtaa cattattcct   2160

tccctccctc ctactcttcc tttcttcttt ccatttgtcc gtgcatccat tggtttagtc   2220

aacagacatt taaacagtac tcactaaatg ccagattctt tgctaggtga ctggaggcat   2280

gcaaaggggg agatgtagtt ctgcctacaa aaagctcaca gtccaatagg ggagtggaga   2340

catggacaga agtaatccat tcccaaggtg aaaagtgact agtgccataa gaaaaggaca   2400

agaaagtgtg agggaaggtt ggtggggatg aaaccaggaa gggggtatgg ctcacttcca   2460
```

gctgagcaga tgggtgtgta ggtttggggga agttttcatg gagaaagaag tatttgaact 2520

gagcactgaa agatgggggta gatttcaact gcagaaagtt ggggaaaggg ttaggagcct 2580

caagcagaag gacttgtgtg tataaaagtg tggaagctgg aaacagcatg cctattttgt 2640

aatttattgg tagagacatg ccactcttag tgaattagta gaaaggcttc ctttctcccc 2700

ctgcctctct ctttcctttc ggatttctat attttgtgtt cttattattc tttggaccat 2760

agaagaggtt catgaaatga aagggtgggg gctagagatg gggtgggctt taccaaccat 2820

tgacttttcc ctcttcttta agtttgatca cctaccaggg gaagtcaagg ggaaatgttg 2880

cctgttaatt ttccttgtta taggttggtt ttgatgttga tgactggtat tacttctcta 2940

ggatataact ttggaaacag cattggtgag ggcattccat gtaaacatc aacttcagct 3000

tttctgttgt agggtatttt ccgtgcttga ctactgatgg tcttgcaaag ctcctgtatt 3060

caaatcctag gctgagctcc agagtgcttc ctcctagatc gaggctttgg atatgctcac 3120

tgctcattag caacctgcag aaaagctggg atgcagtctt cactgatttg gtgtgtaacg 3180

gattccttga agggaagcct gctttgctga tggggtcagc atacgtggcg tactgacatg 3240

ggaatcatgg catttccagc cagtgctcaa ctctgtggaa tgcttcccct ttcagcccaa 3300

gtctcaaatt gcctccaagt ttcctcattt ctgagaaagt gagccagtga aggttgatat 3360

tcaaatatat aaacagctaa tgtggcattt ggcagtgtcc aatcagaacc agtcatatag 3420

tgctagagca aattgctgtg ccaggcagta actgttttgt ggctggctct tggggaaggt 3480

ttggatactg ggggaggggt caggataatg ggtgctggaa gcatctctca agtaacttgg 3540

gaaagcagct ttttctaaaa tgggaggaaa tttgagttta tttatttatt tatttatta 3600

tttggagatg gggtttcact cttgttcccc aggctggagt gctttgacac gatctcggct 3660

cactgcaccc tccgcctcct gggttcaagt gattctcctg cctcagcctc ctgagtagct 3720

gggattgcag acgcccgcca ccacacctgg cttttgtgtg tgtgtgtgtg tgtgtttta 3780

gtagagatgg tgtttaacca tgttggccag gctggtctca aactcctgac ctcaggtgat 3840

ctgcccgcct cggcgtccca aagggctgtg attacaggca tgagctacca agcccggcct 3900

atttcagtat tttaagaact gatatggtgg aaccagtgca taccagctaa atataaatgc 3960

tgaaacgttt tatttttttt aaaagatcaa ctatgtcctg actacagcct aagcaaaagg 4020

gttcctggtg gtttctgcct gtcaacaggg aagatctcac ttcacagagg ctgaaactgg 4080

ggctagttat ggatgctggg ccctgaacag gtagaatttc ctatctttta gctatagttt 4140

aagccagaag ttttcaaact ttttggtctt aggactcctt tatgcttgta aaaattattg 4200

```
aagaccccaa gggagttttg ttgctatagg ttgtatcagt taatatttgc cacaatagaa    4260
atttaaactg agaaaatttc aaaataatta ttttatttaa caatggcaat aataaaccca    4320
attacataaa ttaacataag tagcacactt tttgtgaaaa agaactacag actcttggta    4380
caatttgttt tagtccattc agactgctat aataaaatac cctagatggc atggcttata    4440
aacaatagaa atttattttt cacagttctg gaggccggaa agtccaagat caaggggcca    4500
gcagattcag catttggtaa gggcccgctg ccgggttcac agaccaccac gttcttgttc    4560
catcctaaca tggtggaaga dataagaaag ctctctggac tctctttcgt aaggatacaa    4620
atcccaccca tgagggctct accctcatga ccaaatcacc tcccgaaggc cccacctccc    4680
tgggttagga ttttagcatg tgacttcttt tgtgtgtggg tggggggcca caaacattca    4740
gtctattgca gtttccaaag caacagcc                                       4768
```

<210> 394

<211> 3636

<212> DNA

<213> Homo sapiens

<400> 394

```
atttgcagcg caagcagcct agcgtgcggc cgcggcgccc aggtcggaaa ggaggcggca     60
tcatggagct gaagaaggac atcaacgctg tatctatcga catgctgctg atcgtgcact    120
cggagaagcg gcgcgccgca cagggattcc aaggtgttgg aaatggagtc cgaagatggc    180
agaaattaga aggaaatgac tttcacggga cacaactgac tgtggaagtc caccctcgag    240
atgccatgcc ccagctgctc aagaagttct ccttggctaa acgtttacaa ggtgataaaa    300
atggaaacac aagaccccgg caacctggag ggaaagatgc ccatgcctac ccctgggatc    360
gatctagcct gaaatccatg tccctggaaa gggtccgcgc catctggatc tggatatgcc    420
atcacataga gtatgacatt gcagctgctc aggagaagga ccgccaagcc ttcaaaccca    480
ctgacatcct gcggacccag aagaccaact gtgatggcta tgctggcctc ttcgagagaa    540
tgtgcaggct cgccggagtg cagtgtatga ccgtgcctgg ctactccaag ggtttcggct    600
accagacagg gcagagcttc tcggggggagt ttgaccatgc ctggaatgct gtgtacctgg    660
```

agggaagatg gcacctggtg gacagcacct ggggcagcgg cctggtggac accatcacct　720

ccaaattcac cttcctctac aatgagttct acttcctcac ccaccctgca ctgttcatcg　780

aggaccactt cccagacaac aagaactggc agctgctaaa acctcctcaa tctctgaggc　840

agtttgagaa caacatgtat cacaagagtg aattctacaa caaagggatg ctgagtgccc　900

acccagagac ttccatgatc agaacaggtg agcccggagc aggtgccagt gtgctagcag　960

caggaatgga gcatttcgca ctgtcctcca ggagcccgcc tgagactgcg ctttcaaggc　1020

atgcccttcc agacgcatgg cttgtgagct tagcacaaag cttgtgtgtg catgtggatg　1080

agtggaggct gctgaggcag cccaggccat cagggcaggg aagggccata ggccacatca　1140

gcagggacaa aagctcactc acactagcat aaacccagaa agggatgtgt ctgaaggctg　1200

caggtttcct agaacttgaa ggctgaacac acagcctggc atgtcacaga agccagggct　1260

gggcacttcc tagctgggtg agtctctctc agttcacata gcagggaaaa ggactacgtc　1320

accctggcta cacatagcct ctgggctcag gtccccaaca gaagctactg gcctgctgtg　1380

ttctcttccc caactcctgc tggagagaat acatggcctc agcagagctg gaatctgggt　1440

gttggtggtc caaccagcaa ggatggggag caacatgggt ctcccaggac aggtgggggc　1500

agtcccaccc aagacagaga gttggggcag acttccttag ggaggtggcc actgagctgg　1560

gtcttgggag aggagaacag gcctagtagc tagacagaga tggacatgtt ctaggcagca　1620

gaggagaggc ggggacacag taagccccca gcctccaaac tcaggcaccc ctggatgagg　1680

gccaagctcc agcacctctg cctggctggc tcagtacccc tcccttctgg aggtgggacc　1740

cagccgtttc cagcccactc ccctggggca gtataggata cccagcttag ccatctccca　1800

tggctggtct gggctgacat gtgctctccc aaccttcacc acggagccat ggcagctgag　1860

tatgtttgca cactctgagg catacggggg ctgccctgga gggccagaac tggtcacaaa　1920

aaagcagggc cttctctgga agattgtctc ttatgcctct ccaaggcctt ggcacctgat　1980

ccagtgctgg gcacacagcc tgggcacgct gcacagccct gtaagtcggg tcagtccagc　2040

ctcccacacc tcagcaaagg actgcctggt ggcaccgtct ctgccactgg ggcctccatc　2100

cgcccaggac aggaggtctg agctcacact gactattagc acagggtgcc tgtgggtggg　2160

cccagagccc ctggggagct ccaacccaca ttgcagggca atggggcagc ggggagcaca　2220

ggtgtcccca agttagttcc aactgacttg tcccttccac cacacaatgg cttcctttgc　2280

caagttgctg agctcttgca aactcttcca actccaaata cctggcagct cctgcagcta　2340

aaataacagc gtgaagttgc tcaatttgag aatccatttc ctgtgcttac aacagatgca　2400

gggcttgttc aatgtatcat aggccgtgga aatatcggaa agaactgacc aggtcaaagc 2460

aacaccaaac tgatgtcatt gagtggagtt tgccttttta agagacataa aaatataaac 2520

accagattcc ttaatttata gaaatctaaa cctaaatatg attccatata tctgatactt 2580

atgtacagag tatttctttg tggtagctag ttctgttaag agaggggagg ggaaggaaac 2640

aacaataggg aaactgagat gagcagaaag gaagggaagg aagagggcac ctagataagg 2700

ggctggaaag ctgccaggct ctaggagagt gccgtggagg ggagagggga ggaggaggag 2760

gcagagggga ctggaagagc cgtggactcc catagaggtc tgcaggggtg gctagtcctt 2820

tatttcaagt cttcccagtc attcaacaca cctttggcaa gaaccctctg ggtgaggcac 2880

cacaaccagg cactaagacg tggcaggaaa tgaaacaggc tagccccttc accacagagc 2940

ccacaggcca gcaaggagtt cggacactac acaaaaatga tcacatgatg aattacagca 3000

gtggaacgtt ccctgaagga cagccagggc taggagagaa gctgccaggg aactcagcct 3060

cagctgaggg gtccgggtgg gctgctttgc cacggggaca ttaccatgaa gccttatcca 3120

ggtttggggg aagtggtggg gagggaggag agggtaggag gaccctgagg catgaagggt 3180

tgtggccttg gaggatctga gagagtgctt gatactggcg aggcaggaag agacaggctt 3240

ctccacgggt ctccagcttg agggctctgc cgtgagccca ggagtagcca ggtggacgtt 3300

ttcaaaggag ccctggggct gctgtgtggg gtgctgggtg gtgctccaca atcaaaggtg 3360

aatctcaggg ggatctgggc ttcactgtgc agaaaagact cacagccagt tgtgagatgg 3420

aacaggacca ggggccgtga gcagtgagga gctgaggtag cttctgccca ctgagctggt 3480

tcagaagtga ggggagagga gggtttttcac caagagggga tagcaactct attgatcttg 3540

gtcactttcc tttggaggtt accatgggac agatgtggca tgcagtggct gaaggcagta 3600

gagaaagcat gtagacaaat aaaatagcat gaaagc 3636

<210> 395

<211> 3857

<212> DNA

<213> Homo sapiens

<400> 395

ttgaaaacta taatgccttt caaaaatggc ttattgcttg gatctcaata tctcccacgt　60

atcttgggtg gaatattttg ctgaagatct ttctgtcaat catttacaat catgtgctgc　120

aaaatgaagt ttgggtcaac agtagaccac atatatgatg gtggttccgt aagcgtataa　180

tggagctatc cctatatagg tataccattt ttatcttttt tttttttttt tttttgagat　240

ggagtctcac tctgttgtcc aggctggagt gcagtggtat gatcccagct cattgcaacc　300

tccacctccc aggttcaagt gattctccta cctcagcctc ctgagtagct gggattatag　360

acacgcgtca ccacactcag ctaatttttg tatttttagt agagatgggg tttcatcatg　420

ttggccaggc tggtcttgaa ctcctgagct caagtgatcc acccaccttg gcgtcccaaa　480

gtgctgggat tacaggcatg agccactgtg cccaggcccc atttttatct tttacacagt　540

attttaacta tatattttcc atgtttacat acacaaatac ctgccattct gtgacagttg　600

cctttagtat tcagtacagt aacatacagt acaggtttgt agcctaggag tcctaagcca　660

taccgtgtac cctaggtatg gtggctacac cacctaggtt tgtgtaagta tacgctatga　720

tattagcaca atggtgaaat cacctagtga cccatttctc aagctcctca cgtgggaagc　780

aatgcatgac tgcatatgaa agctcttaaa tagggattgt ttctaaatta atctcaaaac　840

agtcattatt tactatttat ggaatttttt tttaaaaaaa ggagcaaaag tatcatttca　900

gtgggaactt aacttggggc tacagtgttt tatttaactt ttaccccaaa gttgcaaagt　960

gttttgaaat ttttccctgt aaaataatta ttttaattca atttaaataa aacccaccaa　1020

ggagacttca agctttaaga agtctagctt cctgtgaaat gtgagaggaa gtcagcactc　1080

atttcagaaa tctgattata acaatagctc catccctaaa tgaggtgaat cttggaatct　1140

cttccatttt attttatttt attttttga gatggagttt ctctcttgtt gcccaggctg　1200

aagtgcaatg ttgtgatctc ggctcactgc aacctctgcc tcccgggttc aagcgattct　1260

cctgctttgg cctcctgagt agctgggatt gcagaaattt ccaaggaaac tatatttctt　1320

acattgatgg aaatgtatgg aaagcataca gttggaccga gaaactaatt ctcagagaaa　1380

ataacttgac tgaattacac aaggattcat ttgaaggcct gctatccctc cagtatttag　1440

atttatcctg caataaaata cagtctattg aaagacatac atttgaacca ctaccatttt　1500

tgaagtttat aaatcttagt tgcaatgtaa ttacagaact cagctttgga acatttcagg　1560

cctggcacgg aatgcagttt ttacataagt taattctcaa tcacaatcct ctgacaactg　1620

ttgaagatcc gtatctcttt aaattgccag cattaaaata tctagacatg gaacaacgc　1680

tagtcccact tacaacactt aagaacattc tcatgatgac tgttgaactg gaaaaactga　1740

tcttacctag ccatatggcc tgctgcctct gccaatttaa aaacagcatt gaggctgtct 1800

gcaagacagt caagctgcat tgcaacagtg catgtctgac aaacaccata cattgtcctg 1860

aagaagcatc ggtagggaat ccagaaggag cgttcatgaa ggtgttacaa gcccggaaga 1920

actacacaag cactgagctg attgttgagc cagaggagcc ctcagacagc agtggcatca 1980

acttgtcagg ctttgggagt gagcagctag acaccaatga cgagagtgat tttatcagta 2040

cactacgtta catcttgcct tatttctcag cggtaaacct agatgtgaaa tcactgttac 2100

taccgttaat taaactgcca accacaggaa acagcctggc aaagattcaa actgtaggcc 2160

aaaaccggca gagagtgaag agagtcctca tgggcccaag gagcatccag aaaaggcact 2220

tcaaagaggt aggaaggcag agcatcagga gggaacaggg tgcccaggca tctgtggaga 2280

acgctgccga agaaaaaagg ctcgggagtc cagccccaag ggaggtggaa cagccccaca 2340

cacagcaggg gcctgagaag ttagcgggaa acgccgtcta caccaagcct tccttcaccc 2400

aagagcataa ggcagcagtc tctgtgctga aacccttctc caagggcgcg ccttctacct 2460

ccagccctgc aaaagcccta ccacaggtga gagacagatg gaaagactta acccacgcta 2520

tttccatttt agaaagtgca aaggctagag ttacaaatac gaagacgtct aaaccaatcg 2580

tacatgccag aaaagaatac cgctttcaca aaactcgctc ccacgtgacc cacagaacac 2640

ccaaagtcaa aaagagtcca aaggtcagaa agaaaagtta tctgagtaga ctgatgctcg 2700

caaacaggct tccattctct gcagcgaaga gcctcataaa ttccccttca caaggggctt 2760

tttcatcctt aggagacctg agtcctcaag aaaacccttt tctggaagta tctgctcctt 2820

cagaacattt tatagaaaag aataatacaa aacacacaac tgcaagaaat gcctttgaag 2880

aaaatgattt tatggaaaac actaacatgc cagaaggaac catctctgaa aacacaaact 2940

acaatcatcc tcctgaggca gattccgctg ggactgcatt caacttaggg ccaactgtta 3000

aacaaactga dacaaaatgg gaatacaaca acgtgggcac tgacccgtcc cccgagccca 3060

aaagcttcaa ttacccattg ctctcgtccc caggtgatca gtttgaaatt cagctaaccc 3120

agcagctaca gtcccttatc cccaacaaca atgtgagaag gctcattgct catgttatcc 3180

ggaccttgaa gatggactgc tctggggccc atgtgcaagt gacctgtgcc aagctcatct 3240

ccaggacagg ccacctgatg aagcttctca gtgggcagca ggaagtaaag gcatccaaga 3300

tagaatggga tacggaccaa tggaagattg agaactacat taatgagagc acagaagccc 3360

agagtgaaca gaaagagaag tcgcttgagc tcaaaaaaga agttccagga tatggctata 3420

ctgacaaact catcttggca ttaattgtta ctggaatact aacgattttg attatacttt 3480

```
tctgccttat tgtgatatgt tgtcaccgaa ggtcattaca agaagatgaa gaaggattct    3540

caaggggcat tttcagattt ctgccacgga ggggatgctc ttcgcgaagg gagagtcagg    3600

atggactttc ctcatttgga cagccgctct ggtttaaaga tatgtacaaa cctctcagtg    3660

ccacaagaat aaataatcat gcatggaagc tgcacaagaa gtcatctaat gaggacaaga    3720

tcctcaacag ggaccctggg gacagcgaag ccccaacgga ggaggaggag agtgaagccc    3780

tgccatagga ggagaacaca gcccacctca ggcctcctgc aaaaatacat agaataaaca    3840

acaacagtta ctaaatg                                                  3857
```

<210> 396

<211> 3693

<212> DNA

<213> Homo sapiens

<400> 396

```
taagataaag tcacccaccc tgcgtttcca gcacttgatt ttatctgaag ccaaacccaa     60

aattcctccc aacctttccc tgctcactgc ccaagctcaa tgcaggtcag caaacgcaga    120

cctttatcgt tccttaggga acctctgagt gggccggggc caaggggaag gaagcatgca    180

tttcatttcc gtgtctttag ccttaggcat tctcagccaa gaaggcaagc agcaggcttt    240

tggagaaaag acagcctacc ctgcccttcc ccaccccttg ccctccctgc cagaatgaga    300

gcagcttctg aaaagctggg tatatccagc cagaaacacg ggaaggattt ggttgcactg    360

gatagaaaca caaactatga agggaatgag agcagcagcg gccgcaggcg ttaacagaac    420

ccctgtctct tcctcaggct ggaagaatcc atcactacct ctctaggaga ctgtcgggct    480

cccagagggg agggttagtg agtaaactga agaataata aaggtgtccc agcctagaag    540

acgtattcag ggcaacaaag aaagtattgc cctgcagtgt tcagattctg agccttttat    600

ctgtgcatct tatcaaacat gtgcctgtag catcctggca cacactgttc tgtcctgcag    660

ggttaggcag ggggattctt tgttttgaag gatgaaccaa gataacacat acagtaactc    720

agatgccctg tgtgtgtgca cgcattagca tgtgcatgca cgtggctgga ggcagccaca    780

cagactgaaa gaatgtgagc tttggagtga ttcattcact tgggtattca ttccacaaat    840
```

cttgctcagc tcctagcatg tgaccaccca ttctggacat ggggatacag gggtgaacag 900

aagagacaag atctctgctc cataggaact tgtgttctgg agggaaacaa acaataaaca 960

agtaaactag gccgagacac gggcttctag gccactccac catggagcaa ctgtatcaca 1020

cttgacctca ctgaacctgc ctctgtcaga ggaggtgaga actgtcttga agggatgtct 1080

gaagacttca agggcctctc agggttctgg cacgtagaca ccgtgctgct gagggcagga 1140

gctctgtggg gttgagactc ttgtttgcta ggcatgaaga gacagggaga gaagtgggat 1200

ggaaagaagg cattcagaac tcacaggcag ccccagcgag gagaagtcaa agctccgtgc 1260

cccttccagc acaaaagcaa gtccattgaa ccggtggctt tttctgtcat ctagctccta 1320

aaaacaaaaa caaaggtaaa ttcctggagt tcaacctaag tgttttgggt caaaggtggg 1380

gtcaaaggtg ggctgtacaa gtgttcatga attgggaggc cggagaaaag acactgaggg 1440

tttgcagaga gggtcttctg ttctggagtc tagttctatt cagtctctct gagaggtagg 1500

gtctttatcg tgtacttgtg cagtttacaa aaatgtgaca aagtttcata atgtaggttc 1560

actcagccat ttaacaaatg ttaatgaaat ggggagctga aatgtaaaag tgataaaact 1620

tctgtgcctt caagaatttc ccagtcggta agggagacag acatacaaat tactatcata 1680

caggccgggc acggtggcca cgcctgtaat cccagccctt tgggaggcca aagtgagtgg 1740

atcacctgag gtcaggagtt cgagaccagc ctgaccaaca tggtgaaaca ccatctctaa 1800

taaatacaaa aaattagcca ggcgtggtgc catgcacctg taatcccagt tacttgggag 1860

gatgaggcag gagaaccgct tgaacccaag aggaggaggt tgcagtgagc cgagattgca 1920

ccactgcact ctagcctggg caacaagagt aaaactccat ctcaaaaag aaataaataa 1980

aataaaatta cttatcatac agcatgaaga ggcagatctc aggcatcttg ggagtatgga 2040

ggaaggagga atccttggtc atactcccaa gtattggcca agagagttaa agaaaatgtc 2100

agcaagaaga tggcattgga ggtgatgttt acattgggtt ttgaatgacc cctgtgggta 2160

gtaggaaaga ttcacgctat ccgatagtgg gcaggatttt attctcagta cttctcttgc 2220

tttaattctc acagtcagta gacaagtaga cacagttgac cttcgcatct tcaatagcct 2280

ttcttccttg tcacagaaca tgcaggaaga gcacattgtg tacagttgca taatatagtt 2340

ggtctaaacg ttagttaatt ggctttgaca ttatttctga gagtcctaca atccaaatta 2400

ttaaaaaggc acagtaacgt taagaaaagc ctgtcaggaa tctgtttat gatacccaa 2460

tgtaagtgag aagctccgaa ttttgataat atgatcagtg tggacttgat tctttaaaaa 2520

aatattgaaa ataatacata tatttagaag acaagaccag ggagaaagag aatacgcaaa 2580

ctgaaagaac ctatgaaacc gttttttaaa aggcaaggtt ggtactgagc ttcctagagg 2640

ctgaagcaaa aatagtttaa aaccccactg ttggttatct tactcgtatc agtgggcttg 2700

agggacatac tcttctctca atggagtaca aaaaaggttt tcttgttcca aaaaaatttt 2760

tttcatgtgt atttatattc aagaaagata cagcattaaa gaatgtggat cacagtgaaa 2820

gtacaaatga aacagtaaat gtggttgtta agagcacaga ctttgatgtc aagattgacc 2880

caaatttaca atctggctct gcaactggtt acaatgttaa gcaaagttgc tacacctcag 2940

tttccttttc tgtcaattgg gaggtaaaag tgccagtcac ggggttgaat cagaaggcct 3000

tggtgaagag atgctggtac agtgttgaat agtttctggc acccagtatc tggaagctgt 3060

agtgatgatt gcagtggggt tcttgtgtct tcttatgtta agaggagccc cgtctgtcat 3120

cccaatctgt gacctacctc agaggtgctc gtgacccaca cacgctttta aacccaggcc 3180

agggcatgaa tgatgatgaa ggcagcccag tggagagcga gggatccaag ggggaggcga 3240

acaaagcaaa cacccctca cgctgtgcct gtcttatttc ttgaaggtga atgattccaa 3300

ttgtgaccaa gaacttcttt ccctgctcct ggatgccaag ctgctggtga agtgtgtctc 3360

cactcccttc tatccacgta ttgttgacca cctcttggct agcctccagc aagggcgctg 3420

ggatgcagag gagctgggca gacacctgcg ggaggccggc catgaagccg aagccgggtc 3480

tctccttctg gccgtgaggg ggactcacca ggccttcaga accttcagta cagccctccg 3540

cgcagcacag cactgggtgt gagggccacc tgtggccctg ctccttagca gaaaaagcat 3600

ctggagttga atgctgttcc cagaagcaac atgtgtatct gccgattgtt ctccatggtt 3660

ccaacaaatt gcaaataaaa ctgtatggaa acg 3693

<210> 397

<211> 3825

<212> DNA

<213> Homo sapiens

<400> 397

ggccaggaaa cacagcacct gggacaccac tgtgagcagg gcctggaaca ggctgtgtgg 60

gagcagaatc caggtgggct tgcgggccac ttggctccct gagccccac tggcctatgc 120

tgaccaaggt cctgacctcc atcttaggca agacatttaa cctctgtggg cctcagttcc 180

ctcccactgt aaaatgggca taataataat gatgcctgac tcatagagtg ttttcaagga 240

ctaagtgaaa caggtatgtg ccgaggccta gtaaatgtca ctatcaccat ctacagtgat 300

gggagcacaa ggggccccag gctggacggc agcccagact cctgggactg gcctgtacac 360

aggtcccgac ttcctgggcc ccgtgtcctc gcctctaaag ccaacctggt gccttctgcc 420

acaactgccc cttccagacc tcagagacag ttgagagaag gaggagtgag aacccacgta 480

caagaggatt tcaaagtagc tgtctatgaa cgagatccag atgaacacgt ggcgccgcca 540

gaagtaccac agctgcggag gaagggagga cagagggctg tgaaacctgc tctcccgcat 600

gcccccctgct ggcctggctg agtgggagcc tgccacccag gctagagcta agtcagcagc 660

tttggttttg ggggactcat gaatacttct gatagctgag atagcttggg actttctttc 720

cagaaagagc agccacctag gcaaggccgg ggggtgcagg tgaagagcct gtgcactgca 780

tgcaggaagg ggaagagcac ctttcccttc ccttctccct ggcctcacag ggagcaccca 840

tacccccagcc aacctgcgtt tggtgcccaa gttctgccca ctctgcggag gtcccaatgt 900

cttggtgtcc agcctgtgtc ctgcaggctt acagcatttc ccactgaaga ggccctactg 960

ggggaaatag cctgaacccc acctacctct ggtctctgtg ctccccaaga ggggagcttc 1020

ccagctgagg ggcctggcta ggggcaggcg cttccagctc cattcctggg ggagcagagt 1080

ctgtactgcc aaggaatcag agaagctatc tgctacccca aggaacccca aaagcacagc 1140

agaggggttc ctggggactc agaaggcaag gccagaacct ctggccctca gcttcagtga 1200

ggctggttgc tctgggtggg actgggtatt gtcagtgagg ggatgcagct aactttctct 1260

aagccccctg aagcagaatt ctaggtttgc ttcttggtag gagaagggga ggggcactca 1320

cctggcccac gaggaggtag atcccccta gcaggataag gatgtggccc gtcagcagca 1380

tggagtttcc aacctccgct ttcaggtgag gggcggcctg ctgaagacac actcagatga 1440

gacctagggc cttgggtcct ctctcgaaca gctcacccttt cagagctgaa gctgagggcc 1500

tactctgagc ctgagctgtg gagaggctcc tcagaacggc atgggaacat gggctccagg 1560

gaaggacccc tggatcctga gaggcacatt gtgtagcatt tcagtgtagg gtctgaagcc 1620

agactccctg gattcagatt ccctctccac accacttcca ttctgtgtga ccctgggcaa 1680

gttacttaac ctctctgtgc ctcccttccc tctactataa actgggggtg attataattc 1740

accatctcaa gggtttttggg ggacattaat tagtcaacac atgtccatca cctagaatcc 1800

tttttcacat acagtgagca ctcagcaaat cttcactgta tcaccgttag tactgcagtg 1860

ctggctccca taagcttggg aatgtcactc cagcagccca tgcctcagca ctattactgc 1920

cccatcttcc cccagggttg tttcaagcag gcctccccca agatgtgccc ccccaaacct 1980

cacgcccttg ccttcttcag ggtaggctga tggtaggcaa cagcggtgaa gatgaacatg 2040

tagatcagat tacacaggaa gtttaagaag aacttgggga tgagcagatc ccatttcgcc 2100

tgcagcagtt tgttcagggg ctccaaaacg accattcggt gtcggtgctg gggtggggag 2160

gggagagcca tgggtacact caacaagtgc aaataggctg cccactccat gtcaagatca 2220

aagcaagggc ccaggaaatg aggagagagg acagggagca ggcttccaca ccccaggagc 2280

cccaaaggac ctcgccaacc ctcccagcta cagtgtgact aaggggcttg ccctccaaat 2340

gagatgctgg ttaacagaga ggacctggat ggttgccacg aggcccttgg catgatcccc 2400

gtcttggatg ggactagagt atggattgag tatggacccg gtggccatgg tcagggtcgt 2460

gcctgctggg acatgcagcc acacccccac tggcacagga atggggcaga tatggtccag 2520

caggcagccc caatttgtgg accttgctgg aaactctgct gggtcctctg cgtgcaccca 2580

tgctcctgtg ggctcaccgg gctcttgcaa tgaaaggcaa tgatctccag cactgagttc 2640

tcctcacagc tgtccacaga agccaggtca tacagcgaca cccggacagg cccatagcac 2700

cactcggtga actttcggga aaggtggctc agtcctgaaa actcccgctg caggatgtgc 2760

ctgaaaatct gcagggtggc catatgagct tgcattcatg gtcccttcct ggcactgatc 2820

ctgggccaag gctgggaaac acccaggact cagcagctgc ccacggtctg cagagctgca 2880

gctgacacgt gcacgtaccc ccatacacgc aggtccttgt ttgtctaaac tcttaaacac 2940

acacacgcac ccagccacat ctgccccagc ctgccagcca gcctggctct tccttcccct 3000

cccctgccct gtggccttcc ttgaactcct caaatggcag attgatccct agccctgggg 3060

tccttgaggc ccctgagatc agagtctact agctgtatct gtgtgtgcac tttcgcggtc 3120

agaatctaga attttcaaca gactagaaag tggtccctaa tccaaacagg ttaggaagca 3180

gtctggtttc acgcgtgagg aatgggaaag gaggaacaga tcagggcact gctttcatag 3240

gccacacagc agtgcctcta gacaagaaag tgaggttcac acaccccagg gagcactcca 3300

aaaaacttgg gagggcagcg aaaaagggtt aaaacttcta tttatgttta tcgtttcctt 3360

aatctttcaa aaatctccac tgtaagccca tgaggccagc cctggtgagc tattggcaaa 3420

agctatttgg aacaggccat tggtaagcta tctggaacaa agtggggggct gcctcatgtt 3480

tactcttcct accagaataa cttccagcta gtcaaagctc taggcattaa aaatgcagct 3540

gcaggctggg cgttttggct catgcctgta atctcagcac tttgggaggc tgaggcaggt 3600

ggatcaccag aggtcgggag tttgagacca gcctgaccaa catggagaaa ccccgtctct 3660

actaaaaata caaaattagc cgggcgtggt ggcacatgcc tgtaatccca gctactcggg 3720

aggctgaggc aagagaatcg cttgaactcc ggaggcggag gttgcagtta gccgagatcg 3780

cgccattgta ctccagcctg ggcaacaaga gcgaaactcc atctc 3825

<210> 398

<211> 3226

<212> DNA

<213> Homo sapiens

<400> 398

aaaaaggagc cgcgtccccg atgtggggga gcgtctgtaa actccccttc gggctgcccg 60

cgtccacccg aggacacgcc ggcaagcagc ggggggaaaaa ggaagccgag atctccaaag 120

gctccccgga tgcctggcgg tcacctctcc agccacaggt cccggaggtt tccttggggt 180

caggtcctgg ggccgggggc caaagaccac tgaggcctaa ggatcctctg aagcgtcgca 240

ggacggtgac gctcccgcga gttcagcgcc ctgtgaaacc ccttgcaatt ggccagttcg 300

gggcggtagg cggggacacc ttctcatccg cccaatgagc tgaccccgta caaaaggccg 360

aatgcgagca tgaccgacgg gaggagaagt gtggatgctc cctaaaccgg gggctggccc 420

tgggccgggg cgcgggcggg tcgtggggga ccgcgagcgg cgggggcggg gcgagcccgt 480

gggggagggg cgcttccgga ccccccctccc gcccacgcaa caagcaggac cgggtcggga 540

ggcccccaga cccgcgagcg cgcgggacag tccgttcgcc aacgcgcgac cgtgctggcc 600

cccgggctct cccggccccc ccgcccgcat ttcgccgacg cggggccgc agccaaggtc 660

acggtgtccg ggtgcttggg gaccgcgggg agtgaccaca ttcattcatt ccctccctca 720

ctcattcatt cattccctcc cctactccgt cattccctcc ctcactcact aattccctcc 780

ctccctcatt cattcgatcc ctccatcact caatcattcc ttccctctct cactccttcc 840

ctccctcact tgctcattca ttgccaccct cactcactca ttccctccct cacttactca 900

ttcattccca ctcactcatt ccctccctca ctcactcatt ccctccctca ctcattccct 960

ccctcactca ttcacttcct ccctcactca ttcattcact ccctccctca ttcattcatt 1020

cctccctcc ctcactcatt ccctcccta ctcatttatt ccatccctca ctcattgcct 1080

ccctccctca ttccctccct ctctccctca ttcattcatt ccctccctca ttcattccct 1140

ccctcactca ttccctccct cactcattca ttccctccct cactcattcc cttcctccct 1200

cattcattca ttccctccct cactcatgca ttaattccct ccctcactca ctcattccct 1260

ccctcactca ttcactccct ccctccctca ctcattcccc caccacctcc cacagggtcc 1320

ccagcgggca tttccctgtc aggcacctgc agcaggaggg gcagccacac accctgggtc 1380

tgcctgcctg ggaggcgcag ccgtggggat gtgggtccag ggcagcaggg gcagcctccc 1440

ccagaatcca gtccctggaa gccatgcaca gccctgtccc accaagacca gcggggggcct 1500

ggcctggctg caactcccag gctcagagcc tccgtggcct gtctagatac ctgctgtcct 1560

ggcccccagc cttgaggtcc tgggaatctg cttttttttt ttcctttttt ttgtgagatg 1620

gagtctcact gtgttgccca ggctggagtg cagtggcgcc atcttggctt actgcagcct 1680

ccgcctcctg agttcaggcg atcctcctgc ctcagcctcc cgagtggctg ggattgcagg 1740

cgtgcgccgc cgcgcccggc taattttttgt attttttggtg gagacggggt ttcgccatgt 1800

tggctaggct ggtctcgggc tcctgacttc aagtgatccg cccacctcgg cctcccaaag 1860

tgctgggatt acaggtgtgg accaccacgc ccagctgaaa tctgcattct taaccagccc 1920

cctgggcaag cctggcagag ggatatggcc ctttggcttc ctgacatggg ctaaggttcc 1980

aacgccatct ttctggcgaa gatgccagca cagggctgtg tggggaggcg tcagccagta 2040

aaagccgtgg ctgaagaaaa gcaagacagc cacgggcctc ggtggatccc actgcagcct 2100

caggcacaga gagggcaggg ctggtgaggt ggggggcttg tcatgagtgg ggcttgggga 2160

gactgactgg atgtggtgtg tggctgggga gggcctgggc ctgaacctgt gggccatggg 2220

agccatagaa ggttgtggaa caggagaagt aagacaaggc cctggttccc tgtgtgtgtg 2280

tggtgaggga ctgaggagac atggctcagg catctagaga attcctgtcc tggtgggaag 2340

tagtgccagg aggggctggg gtttggggag gctgtggcag gtgagggtga gggacatgga 2400

gcaggtgggg gtgagggaca tggagcaggt gggggtgagg ggcatggagc aggtggggga 2460

gggaagaggc tccctcagtt gtgcatcctc agcccacaag tgtcctttga gcagcctgca 2520

cctggcacac gttttcaagg agaggggact tgttgggtcc agctccctgg gtacaaagga 2580

gaaactgagg cttggagagg gtggggggtt tgaatcagta actataagat cctgggcaag 2640

gcttgtggct gactgtgcca ggcacgcgcc cacctttgcc ctggtccct tgggaggggga 2700

gcaggaagtg tgatgcagag ctgcctgcgg tagggcggga cctccagtgc cctgggtgcc 2760

ccctccggggg cctgctggggg ccaggctctg cacaggggtt tgagagcaga ggcctcttca 2820

ctgagggccg attcccccag aggaataagg gcctctgcag tagagtgaag gtggaccctt 2880

accccggagc acgcacaaaa accagctcaa aagtcagcct cgggccaggc gcggtggctc 2940

gcgctggtaa tcccaggact ttgggaggct gagtagggcg gatcgcttga gctcgggagt 3000

ttgagaccgg cctgcccaac atggtggggc cctgtctcta ctagaaatgc agaaattggt 3060

tgggtgtggt ggtgcacgcc tgtaattcca gctacttcga gggctgaggc gggagaatct 3120

cctgaacgcg ggaggcggag gttgcggtga gccgagatgg cgtcactgca ctccggcttg 3180

ggcaacagaa cgagacttca tttaaaaata aaagaaaaa aaaatt 3226

<210> 399

<211> 4683

<212> DNA

<213> Homo sapiens

<400> 399

ctttgctaat taaacttcac cacaaactct caggaaaaca aaactcctac tatcctcctt 60

ggcttgatga catagaaatt ttaatccaac cagaaattcc taaatacagt catggagatg 120

gtataactgc cgtggaaaga attttactaa aagctgcatc gcaaagtaga atgaacaaac 180

gcatcattga agagatatgt agaaaagtga cccctcctgt accacctaaa aaagtcactg 240

cagcagagaa gaaaacattg gacaaagaag aaaggcgaca gaaggctaga gagaggcagc 300

agaaattgct tgcggagttt gcttcacgac agaaaagctt tatggaaact gcaatggatg 360

ttgattctcc tgagaatgat attcctatgg agatcaccac ggcagaacca caggtttccg 420

aggcagtata tgactgtgtt atttgtggac agagtggccc ctcctctgaa gatcgaccta 480

ctggattagt tgtactgtta caagcatcct cagttttggg gcagtgccgt gacaatgttg 540

agccaaaaaa gttgccgatc agtgaagagg agcagattta cccttgggat acctgtgcag 600

ccgttcatga tgtgaggctt tcattattac agcgttattt taaggatagt tcatgtctct 660

tggcagtatc aattggctgg gaaggaggtg tttatgtaca aacctgtggt cacacattac 720

atatagattg tcataaatct tacatggaat cattacggaa tgaccaggtt cttcagggct 780

tctcggtgga caaaggagaa ttcacgtgtc cactctgtag gcagtttgct aacagtgttc 840

ttccatgtta tcctggaagc aatgtggaaa ataacccttg gcaacgtcct agcaacaaaa 900

gcatacaaga tctcataaag gaagtggagg agctgcaggg acgaccggga gctttcccat 960

cagaaacaaa tttaagtaaa gaaatggaat ctgtaatgaa agatataaaa aataccactc 1020

agaagaaata tagagactat agcaagaccc cgggctcacc agacaatgat tttctcttta 1080

tgtactccgt tgctagaacc aatttagaac ttgaattgat tcatcgagga ggcaatttgt 1140

gttcaggtgg tgcaagcaca gctggcaaaa ggtcttgttt aaatcagctg tttcatgtat 1200

tagccttgca catgcggctt tatagcattg actctgagta taatccctgg agaaagctca 1260

cccagttaga agagatgaat ccacagctgg gatatgaaga caacagcct gaggttccaa 1320

ttctttatca tgatgtaaca tccctttttgc tcatccagat cttaatgatg ccacaaccct 1380

tacgcaaaga ccactttacc tgcattgtga aggtactttt taccctactg tacacacagg 1440

ctcttgcagc actctcagtt aaatgcagcg aagaagatag gtcagcctgg aaacacgcgg 1500

gagctctcaa aaagagtaca tgtgatgcag aaaagtctta cgaagtatta ctgagctttg 1560

tgataagtga actatttaaa ggaaagttat accatgaaga aggaactcag gaatgtgcaa 1620

tggttaaccc tattgcttgg tctcctgaat ccatggaaaa atgcttacag gacttctgct 1680

tacctttct cagaatcacc agccttcttc agcaccacct ttttgggga gatctaccta 1740

gctgccagga agaagaagaa ttttcagttc ttgccagctg cctgggactt ctgccaacgt 1800

tttaccaaac agaacatcca ttcatcagtg cctcctgtct ggattggcca gttccagcat 1860

ttgatattat aactcagtgg tgttttgaga taaaatcatt tactgaaaga catgcagaac 1920

aaggaaaggc cttgcttatc caagagtcaa aatggaaatt accacaccta ctacagttgc 1980

ctgagaatta taacaccatt tttcagtact accacagaaa aacctgtagt gtctgcacca 2040

aggttcctaa agatcctgct gtttgccttg tgtgtggtac ttttgtatgc ctgaaaggac 2100

tttgctgcaa gcaacaaagt tactgtgaat gtgtactgca ctctcagaac tgtggtgcag 2160

gaacaggtat tttccttttg atcaatgcat cggtaattat catcattcga ggtcaccgct 2220

tctgcctctg gggttccgtg tatttggatg ctcatggaga ggaagaccgg gatcttaggc 2280

gaggcaaacc tctctacatt tgtaaggaaa gatacaaagt tcttgagcaa cagtggattt 2340

ctcatacttt tgatcacatc aataaaagat ggggtccaca ttacaatggg ctgtgactct 2400

ccacctcagc attgcatcgt atcatcattt tcgctacgaa tttattttc aacaataagc 2460

tttaacttaa tttggggggat taacactttt gctgagggag aaaaagaaaa catacattat 2520

gaagcctttc caaaattagg tgcttggtaa tcacgttaat ggtataattt tttttttta 2580

atatctggag aacattaata acaagttaaa ttattcttta gtggtcattt tttaagtgca 2640

caattaataa gaagcacaac ttgttcacaa actcattcag aaatgattct cccaacaatg 2700

catatcagct attcattgat acttagagtg ggtgtgattt atttgacatt ttactgcttc 2760

tttctgtctg tgtgttttaa tttgcatctg ccaagcataa tgcatctttt ttcctctgcc 2820

attcttgtgt tgattggaga attttttctgt atgtaattag aaaaaaatgt aaaacatgat 2880

ttatgtgaaa tactgtatag taaaagttgg tctaatagta gaactttaaa attttttctt 2940

attgtgagga atctgttaaa agtttaaagc tttgctgaaa actgaattca ttctcaggaa 3000

tttcataaat cttctcccca ggtaaataat tgaaatagct gtaaaataag tagatagctg 3060

ctgttaatat aatacagtac attttggggg gcatatgtgt ggttgggggg tccttaaaaa 3120

tcaaaatttg ccatttcagt tggatgaatt actagaggta ataacaaatc ttactataaa 3180

atcaagaggt ttaagaacat tcactgggca gatgttgatt ccgtgcatgc ccacctttta 3240

ttaccaaaca aggttttgtt tatatgattg tattagaaat gctcagactt ccccagaaat 3300

gaaccataaa ttttggaact tcctttcagc tcaagaggtt cagctatatt gtatttgtgc 3360

agtgtaatca ctactatttc tgctcggttt cctaaaagga aaaaaaaggc gcagtggtga 3420

tgaccctcat gaatgagcca cgcttctgca ttcttcttag aaactgctgt gaaaaacaat 3480

ttatgtttgc agggtttaaa aatcagtaaa aatgggaatg attgagctaa aacccactct 3540

atgagaaaga agattactga aaagcatgtg acatattgct acaaagattt ttttтcctaa 3600

atgattcagt aattgaatga ttatttaata tatagtgcta tcaagcaatc cctggtactt 3660

tggacttcca tggcttgtta tataaaatta catttttaca tgtaaaaata aactaaacaa 3720

atctaatgat aaaatataat gtcagatcca tgttctaaaa aattttttgta atgacatgac 3780

attacaagag tataaaaatg gacattaaat catggccttg cattaaaata tggaaagcag 3840

agcagtacat attcaaatgt attcagaaag tcaaaagatt acctatcgtt ctacaataaa 3900

atacatggaa atagcttgct atttttatat acatttccaa aatattaaga taactttctg 3960

taagagtcaa tgattctgtt cgactaaata gctgtccttt ccaacacatt gctacttttt 4020

taaatactgt atcataagtt cagcctgtca tacttttttgc attgatcgtt atgaatacca 4080

gaccatttgt aagtgtggtt gaagagcaaa atgctaattg acatctctag taaatactgt 4140

tacaggattc atgaacttga ataattctac agtttgaaac tctgatgcta tatatacatg 4200

gtataatgta ttcagacttt gattactact tatttaaaat ggaatgtttt atggttgtgc 4260

atatggatgt gaagtgaaaa tattagcctt aactttaaaa tttgggtgtt tgatagtgtt 4320

tattttgata ttggtgaatt agtcaccagt aaattttaaa aaagcacttg gttgaaaatt 4380

gtacttgaat acatacatgc atgctgctaa actagaactt taattttccc ccataacttt 4440

tataagtccc atttataaac ccactttaa aaataacagg tccaagttag agtgatgtgt 4500

gtatattatt caaaaaaatg tactggtgtg atatcttgta tgaatgatca tttaaataca 4560

gtacattact gtagaagcta aattgatctt tataattaag cagaaattac aaaactagga 4620

ataatcaaca ttgtaagata tgttaataaa aacctgctgt catttggttt gtgaaaggtc 4680

ctt 4683

<210> 400

<211> 3392

<212> DNA

<213> Homo sapiens

<400> 400

gtcggcgctg cagcctgagc cgggcggggt cccgctgcac tcgtcctgga ccttctggct 60

cgacagatcc ctccctggtg ccacagcagc tgagtgcgca tcaaatctga agaaaatcta 120

cacagtacag acagtacaga tattttggag tgtatacaat aatatccctc ctgtgactag 180

cctgcctttg agatgtagtt atcatttaat gagaggagag aggcgaccac tttgggaaga 240

ggagagtaat gcaaagggtg gcgtatggaa gatgaaagtc cccaaggaca gcacgtccac 300

agtttggaaa gagttgctgt tagcaaccat cggggaacag ttcacagact gtgccgcagc 360

agatgatgaa gtaataggag ttagtgtcag tgttcgggac cgagaagacg tcgtccaagt 420

ctggaatgta aatgcctctt tagtgggtga agcgactgtt ttagaaaaga tctatgaact 480

tctgccccac ataactttta aagcagtatt ttataaaccc catgaagagc atcatgcttt 540

tgaaggtgga cgtggaaaac actaattgca ctctgtaaag aattctttgt cctttgctga 600

ttggtttttgg aaacggtctt aacaggaggg agagtgaaga gaagacttgc cgaagccgat 660

gctggtcaat ttagagtggg tttctgtcct tgcagatggg caattaggac tcaaagtggc 720

aggtgggggtg gggggagatt gtgtgggttt ctaccgtcac attacttgct ttttaaaaaa 780

aacacacaca aaaaacttt ttttttggctt tctaaattct ctgttctttt cactctgatt 840

tttttttttt tttttgccgt ttaaaattcc ttattcagcc taattattgt tttctacact 900

cccctttcat tgaggcacaa gaaatgggtt tcccttaag tagctctgct gtacctagtt 960

aatgagaata tgcataatca tgacaatact gcttttgaat accacactgt acaaggagga 1020

acactagctt ggagaaatct gtcttctgat tatttgttgt gacacattcc tatgtactgt 1080

gagctgggca ttgttttttt ctgtcccagg gaaaagaaaa accatactta atgtgatttt 1140

gcactgacag cacacaaatc tttaatttc cttttttaaaa catttttttt tagtgataaa 1200

aggaaaataa tagttggatt gcataacatg aaaactataa tcacaattca gtatcaggat 1260

ataaatcaag ctctaagtct ttggaccctc tgtggaaaca tttctaaccc gaattttaat 1320

ttggcctttt caaccaaagg cttagagtgg tagcaaggga tttcttccaa taggaaacct 1380

gatgtttctg atttaaagag aaggtgatat tttaattgtt tgaattaagc tccttgcgaa 1440

gttcgggtgt gtttacccac ttagggcttt ctttcccagt caacgctaac acattttgtt 1500

aaatgatccc tttccctgct cacattgtgt gtcatttctc atcatcagta gtcctccagc 1560

ctgggcagct gtccccaccc tttttcatgt aggtgcagga agttaaatct catttccagg 1620

atgcatgtga acatttacaa agttgaactt tgagtgcatt ctgctcatat gaattattgg 1680

gattgttgat atatattgta ttatgctacc aaagaaatat tggttttatt agaaggaaat 1740

ggtcatcctc tggaccatgg agactagctc agaatacgct gatttccctc tcctgacttt 1800

gccaagcctt tggctgcttt tgcctgataa agggcagggc catctgaaga cacttcccc 1860

agtcggcttt ggagtcacgg gagctagtgc ctgctcacac atttttcaaa agggcagtgc 1920

actcagaact tcactgtacc tgggattttt aattcctctt gcagtgttga ccagcagaga 1980

gacttgaggc tactttaagc ctccactatg tgtttgtaga taaaattctc cattcaaaca 2040

ttttaaagga ctttgaacat tatctgctta tggaagttgt gcccttcact tggttagtaa 2100

ccacctcagc cataatactt accatcatag gtttcttaaa atgctttttt tttttccct 2160

aaacttgagt ttccttagtg atttcaaaat gaagtataag aatatcagat ccagttagca 2220

aaagcctagg acttgtttct ccaaacattg tactaacatt caacttgttt taaaattatg 2280

actcaagaat tttaaaaaat tattctggac atgaattaaa acttttttat aatataagta 2340

tttttctgat tgaaaaaagg atataattga cttcactcta attgtcatgt atatttccat 2400

aagtaaatgg attttgaagt attttttattt ttttggacttt atttaaagca tttgtgatga 2460

catgttcaac ttttgcatgt atgtagcctt tgaagtaaaa ataaataggа atgttaggct 2520

```
cacgttaata tttctagttt ctgtttatga tcatggaaca tgactagcac acaaagtaga    2580

tttttgcccc agtgaacttc tgcaactgtt tctgaccctt tagaaaatac caactgtgag    2640

aaggatttaa tttgcctaat gttaaaaacc tatcatctaa attactttca gagaggatTt    2700

tgtcagattt tggtttggaa attgttttaa ttgaatattt aatcataata gactttgtat    2760

gaactaagct gatttaatca gtttaaaaac ctctcattac cttcttagat taaagaagct    2820

aatactgttt tgagatagaa ggaaatattt tgtggggcat gtgacttttg tgttaaggca    2880

gtttacccat cttggctgat gtggggaaag tgcaaacttc cagtagaatc ccggtctttt    2940

catccaagtg cttgcagggg cagccttgta gtctgcaaag aaccatgcag aaaccaaaga    3000

gcttgctttt ttgtctttgt aattccttag ggtctgtgat atatgccagg aagtctgatt    3060

gaaactaata tgcttttTat tctcccatta ttccctaaat tgttatatca caggcacttg    3120

cctacattgg gaaagtaagg acaaataata cccatttaaa gtaacttgcc tatattttga    3180

ctgtctttcg taagcacttg ctgaactgct gacttaactc agttttaaga tttcctcttt    3240

cccccccaact tttccacatt tcttaaatga gggtgtaatt tactgcaaac atgtacattt    3300

aatataatat tgctgttaga ctcatggtac actttatgaa gcaaaaacat gaaaaggaaa    3360

ccacaactct aataaacttt aaattaaaga tt                                  3392
```

<210> 401

<211> 4077

<212> DNA

<213> Homo sapiens

<400> 401

```
gcttccaccc aacttcctgt taggacccac ccgaggacgg gtcaccatgg ctttggagca    60

cctggtagtg tggcgtgtcc acagtgaaga ccagagtttc gttgtcctta agactgacct    120

ggggagacgt ggctgcaggc cattgaggaa gacggcaccg aaagcgaagg aagctcctgc    180

tcctcctaaa gccgaagcca aagtgaaagc tttaaaggcc agaaggcag tgttgaaagg     240

tgtccgcagc cacacgcaaa aaagaagatc cgcatgtcac tcaccttcag gcggcccaag    300

acactgcggc tccggaggca gcccagatat cctcggaaga gcaccccag gagaaacaag     360
```

```
cttggccact atgctatcaa gtttccgctg accactgagt gggccggaag aagatagaag    420

aaaacaacac gcttgtgttc actgtggatg ttaaagccaa caagcaccag atcagacagg    480

ctgtgaagaa gctctgtgac agtgatgtgg ccaaggtcac caccctgatt tttcctgata    540

aagagaacaa ggcatatgtt cgactggctc ctgattatga agctttggat gttgcaacaa    600

aattgggatc atctaaactg agtccagctg gctaactcta aatacatgtg tatcttttca    660

ccataaaaga ataatgtttt tcataagagt gacaacttaa ttagaatcaa atctataagc    720

tttaagattt tacatttctg taagtataat attagcttat ttgactagaa ctcaagcaga    780

ataggaattt atgtttgttt tatattcaag tgataacttt gaagacatag ttttattaca    840

ccaaaaattt tatattaatc tcatttaagt aagttttatc caaatcatgt taacttaaaa    900

aacatttgat cagttcctat atttctagga gtttggtgaa tatttatttta taaatggtta    960

ttttttttcca agccaagtta gaatagagca cttttatagg attttataaa tgaattttgc   1020

agtgctatcc ggagttaaga aaatatcaca tatacattac atacagtaat agatatacaa   1080

acacaaatag agatttcata gctttcatcc tgaaatttca gccatgaatc aggcataaat   1140

attctgatgg ttaattttag acacctactt gattggatta agaaacatac atagctggtc   1200

aaacaatttc agccatgaaa caggcataaa tattctgatg gttaattta gacatctact   1260

tgactggatt gagagacaca catagctggt gaaacacaat ttctgggcat atctgtgaag   1320

gtgtttctgg aagacactga gataaccctg acccagtgtg gatgggcact gatatggttt   1380

gcctgtgtcc ccacccagat ctcatcttga actgtagttc ctataatccg tacatgtcgt   1440

gggagggacc cagtgggagg tgactgaatc atggtggttg ttactgccat tctgtttttca   1500

tggcagtgag tgagttctca tgatccaatg gtttcataag gggctgttcc cctttggctc   1560

agcacttctt cttgttgctg ccatgtgaag aaggacgtct ttgtttcccc ttctgccatg   1620

attgtgaggc ctctgcagcc acgtggaact gtcagcccat ttaacctctt tgttctttat   1680

aaattgctca gactcaggta tttcttcata gctgtataaa aatggatgaa tacaggcacc   1740

atccaattgg ttgagagccc agatagaata acaaggaaga ggaaaggtga attatctcct   1800

gaaattgaaa catccttctt ctcctgccct tgacatcaga atcagtgtct cagagctttg   1860

gcctcagaat cagagttaca ccattggctt ccctgattct gagtccttta tatctggagt   1920

gagtcatgct gccagctttc ctggttctcc aacttggaga caggctattg tgtaacttct   1980

cagcctccat aattatgtga accaattccc ctaatgagtc ttctctcatc tatctacata   2040

tatcctattg attctgcctt tctggagaac cctgactaat gttattacaa taatacaaaa   2100
```

```
ttcactagtt tatatagaag acttggtttt tgtctttgcc ccattttgta tttgtattat 2160

aactgtgtat ctggaaaatg gaacaagttt ttatcttctt catatgaggg ccaaagcttt 2220

tttctcacca atattttgg agatttttaa gattttcttt tgtttggaca tacaatctta 2280

tggaggctga gaaataaaat tttttctatt ttatttttca gccccagatg tttgcttttg 2340

cagattcttg agcacattga gagcatggag agcactccaa ggcatggagt ggggtgccta 2400

aagtttcagt gattacaggg agttgagaga ctcaactggg aaaggaaaag tctaaaagga 2460

ggcaatttgg aagataaaaa ttttctcaaa ggagcgatta aatttctaaa taattcttag 2520

taaaatcatg taaacaggaa aggaaataga attagttcca tattggtgga acacatagca 2580

gaggtttgag aagggagaat ttagtgtgta tgttaacccc atcatcccat cctagcaaag 2640

ctgagaactc agttttgaaa gttactctgt ggtcccctca gccaagagtg gttctgttca 2700

gtcagttggg agcttataat ttaatttttg tttatcaatg ctaatgcgaa agagtacgct 2760

gtcttcatgg cagctgaatt tgcaagaaac tccttggatg gggttaatgg cagctgtatt 2820

tttctgggag ctctgcttta attggacaaa gtaagttgtg gtaagatttc ttcttttatc 2880

ttcagtatct caaatgtttt catttaaata atctttataa caacttttga tgtctgagtg 2940

gattcccata cagtcatcta ttgtaagact ttctgattcc gttttttcc tttggtcatt 3000

atgaataggg cttatgtaaa taattgcatg gtagcttttg attggaagta acatcaaagt 3060

agttgtcaaa atacttagga atgttatttt tggattgtaa ggtgagactt gtttagcttt 3120

ggaaaaaaat gcccaacttg aatagggga ggaaaaataa ttttctgttt ttggaattct 3180

tagatgggat gctctgtaaa aactgacaga ttaaaatgag aaaaacagaa aagttgaaaa 3240

acacgtatac cttatggtta catgggagat attcagggaa aaatgagtaa atctccaaca 3300

ggtggctttc aattcaagca taaatactgt cttcaactta agaaagaag atttgaggtg 3360

cagtattggg gagttaacca gcaaaagcac attagacaag ggtaaggttc attatacaga 3420

cttaagtcca tgcattctcc attgataaga ctctttagtg atttagttat ccttctcttc 3480

ttggtgtcga gagaggtagc tttaaatgg tgatttcctt tatagatgta aattttcctt 3540

acacaagtgt aacttctctg ttttcacaac ttcctttgtt agcattttt tttttcaaa 3600

ataattagct tggaataatt cttaagccaa agggacatat tttggggttg catattctgg 3660

tttcctacca ttatattttg gggtggcata ttttggtctt atacactgtg ttccaccggc 3720

aatgaaaaga gttcttgttt ttcctccagc aatttgtcat ttgttaaaga gtttagcagt 3780

tctaagagat atagaccagc tgtgctatct ttttgtggtt ttcagttctc tagtatgttg 3840
```

agcatctttt tgtaagtgta cttgccatct gtagatcttc tttggtgagg cgtctgttca　3900

gatctgtgtg cattttttaat tgggctgttt aacttattgt ttagttttaa caattttta　3960

tgtattttga atacaaattc tcagatctgt attttgcaaa tattttcttc aatatgtggc　4020

ttgtcttttg gttctcttaa caaggtctct tccagagtat aaactgtaaa tattaag　4077

<210> 402

<211> 3452

<212> DNA

<213> Homo sapiens

<400> 402

ggatgcctaa tgtatatcac aaattcaacc aaaataacaa actctttttt tccaccctat　60

acatgcaaca cacaccagac accccatttc gccgatgaca atataatctt tcagcctaac　120

aggctgacag tttccaggtc accttcactt ccttgtgcta caaatctaat cagttgccaa　180

atcaatttca tttctatttt aaacattttt caaaagttcc tctttagtgt agttttcctt　240

ttctttctgc tacattgtcc tagtccaggc cctcattatc tatcccctga gcaccccaat　300

agctctggtt gggaaaatag gactgaaacc taaaaatcaa catcaacaca aagtaatata　360

tgctaaagga tatgtgaatg gaaaaaaaaa aagaggtccc taactggcta tgcaaaagtc　420

agatctggac acagatatgt ttcatctgac ctgaagatca tttttacact attgagtcaa　480

ctttaaggaa agacaaaata aaaatctata tgttcaggtt ttctggtaaa gggggtgatc　540

tggcaacact agagtctagt ccattcagtg tagttgtcaa ctggagctga gctgcagtcc　600

cctccttaga catctgctct ctgaggcccc ataggcatca ccattcccta gcttcactca　660

attacttact ttcacctggc tctactcagc catgcttctt ggtccccgta ggtggctgag　720

tttgtaaatt ctgttgtaaa agtcagtgct aagggttttt gttggtaagg atgctagttg　780

tgctgcatat atccttgaca cctaacactt catctctcac acagtaagca ctcaataaat　840

gttgggagaa agttttggag gtgcctatgg gcaggcaaag tacaaaggta cacaaagaaa　900

gcaggattta aattgagcct tggccaaaac aggtggattt gattaacata caaagaggag　960

agaaaataat atttgagaca aagaatattc tgttttaatc ccaaatttgg tacttgttgt　1020

ttaatcttat tgtttaattt acttaacttc tttgagcctc ggtttccctg tctgctgaat 1080

taggataaca tatatgtctt agtgttatta taactaaggt aaattagtaa gattcaatta 1140

ctgaaatact gaaattactg aggtaaatta cacagtagaa ttcaataaat tgtagttatt 1200

aacaacaaca acaagataat aataataact ccctgaataa agtcaccaat agatgtatac 1260

agtcagggca tgtgggtagc ccaattagac tgaagcaaaa tgcttcacag agggaaacaa 1320

tgataggtaa aaaaggagag agagatgaca gaaaccagag tcagtcgcca tttctctctc 1380

caaccaactc aaatcctaaa gctaacaaat gcattactga gtttcctgtg gaaacaaagt 1440

gtaacaaagg ccagggactg tgatgtggtc ctccaagtag aaagagcttg agctttgaat 1500

cagatacaca tgggttctaa tatcagggct ggcacttact agctgtgtaa acgagccaga 1560

ttgttaaccg ttctaaatct catttgcctt atctataaaa tggggatggg atggcctttt 1620

aaaatagggt tgctgtatta aacagtaata taaatgctac tcatgatggg aacacaataa 1680

atcttagttc tttaaactgt accacggttg caccatcatg tgctatctat cctctgtccc 1740

tttcttttct ttctctcttg tttgtatttg ccgcctatgt ttttctctat ctcttcttca 1800

ctaggctctt ttgcctcctt atctatacct agtgtgttaa gtgtttacta agattaatct 1860

cattcaaaag catttataga ctccttactg taagtcaggc attatgctaa tacacatgtt 1920

agcacagctc cctctccctc tactggccct ggaagtactt caagctcatt ttcacatatg 1980

agccatgtcc cttccaggta aatcagtttg caaagtatat cagcttgaag ttaaacaagg 2040

ccacattctg agccaaactg tgctcacatt ttctgtagtt ccaaaagact gtgtgggcat 2100

agcatagaga agaaccagga aacctgggat aggtatcact ggaactacag gaagcatcag 2160

tgaacaacag tagaggaaca aaagtcaaag gatagccagg caaatccttt gacccattaa 2220

tcatatctgt caattttgcc taaggaaata attatggata tgcacaaaga tttaactaca 2280

aaatattcct tccagacttg tctataatac tacaaagtaa aacaaacctt aacatctaac 2340

aacagattaa ttcaattatg ttttattcat gtaagctatt aataaagcgt gtcacagagg 2400

aatatttatt aacaaggaaa gatgcccagg ctgtattatt aactgagaaa agcaggttgc 2460

aaggcaaaat atatgaatga acctgtgttt gcaagtatat atgaatagag aaaagactgg 2520

aagccaagcg agatgttaat gattgactct gaaggtgaga ttatgaattt ttactttta 2580

ttttgtgttt ctagctttgt ttccatgtac cacttttata acaagaagaa ataccacaca 2640

cacacacaca cacacacaca cacacacaca cacacacaag tgttctgtga gtggagacag 2700

atgatagcta gaaagctagc aaggtggatg gatgatgatg atagatagat agatagatag 2760

atagatagat agatagatag atcgatcgat ctatctccac atcagggagg cacatcaagc 2820

cagatgttta ggaacacagt gtttaatgag ccttatgggg tatcattagt aacaggttaa 2880

tgaaaacagg caaaggtcct gcaacttgtg tccgagcctg ttcttttgc catcaggtcg 2940

acgcccacgg taacattctc ctcagcaccc tggaaatccg gaatgagacg agtggctcgg 3000

aagtgctcac gagcgtgagc gaccccaagg ccaccatgta ctcctatgac agcgccagca 3060

tccagtaccg caagcccctg agcagccgcg aggcctacgg gcgcgccctg gaccggcacg 3120

gggtacccag caaggggcgc atccgcaggc gtgcctccca gctcaaagtc aagatccccg 3180

acttgactga tgtgaattcc atagacaagt ggtcccgaat gtttttcccc atcacctttt 3240

ctcttttta tgtcgtctat tggctttact atgtacactg aggtctgttc taatggttcc 3300

atttagacta ctttcctctt ctattgtttt ttaaccttac aggtccccaa cagcgatact 3360

gctgtttctc gaggtaagag gttcagccat ccaattggtt ttaggtcttg catatcagtt 3420

ttattactgc accatgttta cttcaaaaag ac 3452

<210> 403

<211> 3448

<212> DNA

<213> Homo sapiens

<400> 403

tttgagacag agtcttgctc tgtcatgcag gctggagtgc aatggcttga tctcagctca 60

ctgcaacctc cacctctggg gcttaatcga gtctcctgcc tcagcctccc aagtagctgg 120

gattacaggt gtgagctgcc acgcccggct aattttgta tttttagtag agatgggggtt 180

tcgctatgtt agccaggctg gtcttgaact cctggcctca agtgatctgc ccccgttggc 240

ctcccaaagt gctgggatta cagacatgag cctctgtgcc cgccaacaat ctattaatga 300

gagtgcagtc ctcctctcct gcagagattt gtccactggg gcccagagac cagagaggct 360

acgcttccaa ctggaaacaa cagaaaaggt tcttgggaat acatggtgtc ttgagctggg 420

tcatgaaggc cacatagtag tcaaggagtt ccaagtggag agtcctgatg ggcaaaagtt 480

tggaggcaga cagagggttc tgtgagcagc cagcaggaca gttagggcag tggatgtggg 540

gttgcaatag aagaaaaggc ttaaaggtgg ttgatgtgga ccgtgggctg cagagtctgg   600

gtaagatgat ctgtgcatgg gaggctgttg gcagtgaaca ttcatttatt cacttggcaa   660

ttatttactg agtacctgcc ctggaccagg cctttggaac ccaatagagg ctgggaagac   720

aaggtcctgc cctgtggttc ttacagggag tgggaaacag ataaaaacca agggttccaa   780

gggaagcctg cagggactga cttggggact caagcaggaa agcaggaatg ctttccagac   840

taggtggtta ggaacagctg aggagcaaaa ttagagctga gacctcaaag tggaagcctg   900

gccccgtgt catgagaagg ggtggaggtg gcagccatca ggaaggaagg gggctggggga   960

gagggctgca ggtatccttc agtagtgagt gtgatgcctc ttgatctggt gtcagtccct   1020

aaggatatgg gctgtcccc taagatgata catggacact cagaatgtca ctgagggacc   1080

actggagatc gtgcaggctg agactaggga ggatgggggtg cccctgaggt tccccagtat   1140

gcctggcaat ggtaggattc tgcccactgc tcctcgcagg ctctgatggc tggccttggg   1200

cttaggagca tgttgctctg acaagtaggg ctgtggatgg cccatcatgg cctggttgga   1260

gctgctgtta aaccagggtt gccatatggg ccccacaggc tccagattgc tgccagggag   1320

caactgccag ccagcaagca ggcccagggt gcagcacagg cagaatgagg ccagggcctg   1380

agaggtctcc tgggtggagg taaggcagga tgccagtgtt ttcccttggc acccatgcag   1440

tgggtaagca gatggaggca cccttaaggg cagaatgggg cctagaaact gccctcgtta   1500

ctttcagtga aaggttttgt ccttggaact tgagaacgct ctcttactct ttgttctaga   1560

ggaacattca gaaggcctgg gtggatgccc ctcttgccaa aatcagaggt aggaagctcg   1620

taggacaaag gcagcggagg gcagaagata gctcctgggg accggagaca ggcccagagg   1680

tgctcactga gtgctgcttc ctctccccga tgccagcctc aagcagggcc gtgggtacaa   1740

ggaggagcaa atctgcacca ggctttctgc cttacccagg aaggaaaagt gcttggtaca   1800

ggcagaccag gatcagtggt gggggaggtt cctggaggag aggggggctgc acctgctgga   1860

cagtgagggg tagggaagat ttggaaagga aggtgtgggg gtggctgtta gctgaggaag   1920

aggggaaaag gcatggaaat tgcgtaaagg ttctggcctt ttctgtagat ccttctgaat   1980

cccagggtct caggggaggg aggagggctt ggggcaaggg ctgagaggtg gggaccacag   2040

gggctggggc tggggctgga tccacttgct cagggtggca ggggctaggc cagaagaccc   2100

cagagttcct gtcacagcct acccacagga gagcaaggga gcacccctac atgcaaccct   2160

ggacaggagg ggagagtgag gattgatacc ctagtttctt ttcaggtttt gggggtcctg   2220

caggaggagc tctgggccag gctggaaatc aaaccagatt caagctgtga atggggcaca   2280

aagaatgtgg gaggatttgg ggtaaaccac agggctgtgc tttccccgag gcagaggtag 2340

tcatgctcct ggtagtcaga aactgccagt ttagggaaga gcaggatgat ggcagaagtc 2400

cctggattcc ccgcccaagg tggtccccca agtcttaccc acttcctccc tctcctcagg 2460

gcattgtaca gggtttctta ctctggccta gaggtcctag atgttttctc aggctgccta 2520

ggccctcatc ttcaaggttg tacaatgggg gaccggacct aggggccttc ttaggttcct 2580

cttgcatcag agtttttggg agttgacctg ggctgatgcc taggggctcc agtcccccac 2640

ccctacctta gtccactggg ggccgtcagc ctcccatagg aactccggag accaccagct 2700

cagggccttg cctagagcca ctgctctaca cgctacagag tctggccact gcctgtctct 2760

ggttcttttt acatgttgta gagacggggt gtcagtatgt tgcccaggct ggacttgaac 2820

tcctgggctc aagagatcct cctgcctcag cctcttgagt aactgggact gcaggcatgt 2880

gctaccttac cgggtccctt tacttttgc ctgcatgtgg ctttgagcct gggaagagtt 2940

gagggggaggg aatgtgctga agttttccct ttcttcttca gccctggggga gccacaggca 3000

ggtgctgagt ggctggagct acagttagta ttggcagccc agccaatagg tggggcccac 3060

cagtccccag gccgggcctg tgtgggctcc caggctggag ggagcctctt gagtccccag 3120

actcagtctg ggcactgtct gcagctaaca atgtcaaaag gaggcatggg gccggtgtgg 3180

tggctcacgc ctgtagtccc agcactttgg gaggccgagg cgggtggatc acaaggtcag 3240

gagttcaaga ccagcctggc caacatggta aaaccccatc tctactaaaa atacaaaaat 3300

tagccgggtg tggtggtgca cacctgtaat cctagctact caggaggctt gggcaggaga 3360

atcacttgaa ccttggaggc gaaggttgca gtgagccgag attgtgccac tgcactccag 3420

cctgggtgac agagcaagac tctgtctc 3448

<210> 404

<211> 3793

<212> DNA

<213> Homo sapiens

<400> 404

atttattgta atttactttg aagtaaattc caaaaacatc tgagatttta acactattgt   60

tttcccttt atagctcagg catttgaaag gatgatgagt ccaactggtt ctaatcttaa   120

gtctaatcat tctgatgaat gtactactgt ccagcctcct caggagaacc aaacatccag   180

tataccttca ccagcaactt tgccagtctc agcacttaaa caaccaggtg ttgaaggact   240

atgttccaaa gaacagaaga gagtatggtt tgcagatggt atattgccca atggtgaagt   300

tgcagataca acaaaattat catctggaag taaaagatgt tctgaagact ttagtcctct   360

ctcacctgat gtgcctatgt atttcagatt ataggttact gtgtgatatt aacaagtatg   420

tctgcaataa gattagtctt ctacctaatg atgaggacag tttgcccccca cttctggttg   480

catctggaga aaagggatca gtgcctgtag tagaagaaca tccatctcat gagcagatca   540

ttttgcttct tgaaggtgaa ggctttcatc ctgttacatt tgtcctaaat gctaatctac   600

tcgtgaatgt caaattcata ttttattcct cagacaaata ttggtacttt tcaaccaatg   660

gattgcatgg cttgggacag gcagaaatta ttattctatt gttatgtttg ccaaatgaag   720

atactattcc taaggacatc ttcagactat ttatcaccat atataaggat gctctaaaag   780

gaaaatacat agaaaacttg dacaatatta cctttactga gagttttctc agtagcaagg   840

atcacggagg attcctgttt attacaccta cttttcagaa acttgatgat ctctcattac   900

caagtaatcc ttttctttgt ggaattctta tccagaagct tgagattcct gggcaaaggt   960

ttttcctatg cgtttaatgt tgagattggg tgcagaatat aaagcatatc ctgctcctct   1020

aacaagcatc agaggccgaa aacctctttt tggagaaata ggacacacta ttatgaactt   1080

acttgttgac cttcgaaatt accagtatac cttgcataat atagatcaac tgttgattca   1140

tatggaaatg ggaaaaagct gcataaaaat accacggaaa aagtacagtg atgtaatgaa   1200

agtactaaat tcttccaatg agcatgtcat tagcattgga gcaagtttca gtacagaagc   1260

agattctcat ctagtctgta tacagaatga tggaatttat gaaacacagg ccaacagtgc   1320

cactggccat cctagaaaag tgacaggtgc aagtttgtg gtattcaatg gagctctaaa   1380

aacatcttca ggatttcttg ctaagtccag catagttgaa gatggcttaa tggtacaaat   1440

aactccagag accatgaatg gcttgcggct agctttacga gaacagaaag actttaaaat   1500

tacatgtggg aaagttgatg cagtagacct gagagaatac gtggatatct gctgggtaga   1560

tgctgaagaa aaaggaaaca aaggagttat cagttcagtg gatggaatat cattacaagg   1620

atttccaagt gaaaaaataa aactggaagc agattttgaa accgatgaga agattgtaaa   1680

atgtaccgag gtgttctact ttctaaagga ccaggattta tctattttat caacttctta   1740

tcagtttgca aaagaaatag ccatggcttg tagtgctgcg ctgtgccctc acctgaaaac   1800

tctaaaaagt aatgggatga ataaaattgg actcagagtt tccattgaca ctgatatggt 1860

tgaatttcag gcaggatctg aaggccaact tctgcctcag cattatctaa atgatcttga 1920

tagtgctctg atacctgtga tccatggtgg gacctccaac tctagtttac cattagaaat 1980

agaattagtg tttttcatta tagaacatct tttttagtga aagaatgtgc catattacat 2040

attgcaacct aatttgttaa aactaactcc agcactaaag ctgaaatgcc acaaacacta 2100

aaagtataaa tatgtctgat ttttgaaaca cataagcttt gctctttagg caggaatgat 2160

cttttcaaat cattagcaca atatttaaat atctaaaaat ttaagagatc catactttct 2220

gtagctttac aattaattta agtactaaaa agacaaggat ttcttttaag aaatttatag 2280

catttactgt gttatttaaa tgctaagcca aagtatctgc acttaggtat acctctttat 2340

gccaataatg attttaatga aggctctttt cagatgtaac cttatgaagg aaatatctgc 2400

tttgtgtata tgccagttag aatactggtt tctaaagtct gtcaaattgt atttcagtgg 2460

cacaaaaacc agttttgagg tcttagactt ataattcttt gaataaaact gataacttat 2520

ttgtataatt ggagtggaga cctacctcca taattagata aactcttttt ggattataat 2580

cagaattttg cctttttttct tctcaaatta ttacatatgt atgtattata tatccacata 2640

tatagttttc cctgattaaa tggatattaa aataattgcg ggtgcttcag gactttttgc 2700

ttctatattt aagtatattg tttttatagc aagaacatat tctgaatgtt ttataaatct 2760

ttaataattt atatgtaggt aatattttg tatcacaatg cattattttt ttcctccttt 2820

ccttccaaac tataccactg tatttaccac ttctaagagt gactgacgac gggccagatg 2880

acccttgaag tagtcattat gtagcaataa atgaagcctg aaacaggttt ttttacttcc 2940

actttaatcc ttagaaattt cttggcaact tcgcatattt tcattgacac cggtgtataa 3000

gtataaattt aaatgaacta attacttttg catattttaa attctttata tggtagttat 3060

tttttataac aggatattaa cataagttaa atcctatgta tttgaaattg ttacagagct 3120

ttcctcttta cttcaaacag caaaaaagtg gggggcatat tgtagtcctg tcatttaagt 3180

tatgtaaaaa atttaatcat tattttgatg ctttaaacat tctcatgtgt aatatatgtt 3240

tttgtatcaa aaacactcat atatttcaag aaaaagaaat tatgttaaat agccctgttt 3300

taagaaaaat atttatgaag catctcaact tgaagatcaa gtcaaagtta taactcagga 3360

tctgaggtct caagctagga gagactgaga attttaatca gtttgggcat atagtttgga 3420

ctgaatcaca tctgtagtac ttagccaaag acaatttgga ggagaatatc agccttctgg 3480

aagtagctac ttcctgaaca atgtaaagtg tcgcagatat tcaataaaat ggcaacctgt 3540

```
tataatttgt gaaatttatt gaaatggtgt aagatgaaaa caattgcata tcaaacccaa   3600

tttatgtttt ctaaatatag tgtatgtatt ctgccatgta agtaattgaa cagtcttaaa   3660

ataaccaaat ggtagagggc tgttccatga tgggacagct ttggatttgt tttcataaaa   3720

tctctacatt caataaaaat tggaattatg tgcctgaagt ttggaggcac attttgaagt   3780

attctttgta gac                                                      3793
```

<210> 405

<211> 4084

<212> DNA

<213> Homo sapiens

<400> 405

```
cccaggtcta ggcgagggat ggaaataagg acagtgccac tagggccccc tgtctgtaca    60

ggaggggccc tgagacagct cctcaaaccc ctttcccatt atacggatgg tgcagatggg   120

gacactgagg tacagagaga cagtcagttg tcctcagaat tggatccaga acctcgtctt   180

ctggcatggc cccccagtgc agcaccacat gtggcctccg aattcccagt ctgggattgg   240

gggagctctg gtccttgggg gaccaccatg ctcttttgga gttgtcaact tggtaggaac   300

cctctggttc caacgctgtg cctttgcggc cctctcctgg catctgctgt ccctttagga   360

ggtcctacca cccttttctt ctgagcctgg acaactcctt cccttgcccc caggagccca   420

cagccggcta aaccaactgg tcagctagaa ccaaccagca ggggaggtgc gctccagggg   480

ggcttctaag aggaggcagt tttggagtca gaggtgaagt gtggggagtg ggattgggtg   540

atagggaagt ttctccagca aagacactgg gcaagcctct tccttggccc ccagataaag   600

ggctgcaggg tggtctccgt gtaagagggt ggggctctgc cctctgtcag gcccttcctg   660

gccctccgag cacaggagag gccctggctc cacctgtgtc ttgcttccct gacttcctcc   720

cacctctaca ttctagcctg gggcagaagt agggtggagg ggtgggtcta gcctccttga   780

tgacacagtt ggggttggag gtgggggcta cccctattct gggcctggtg ctgtccctga   840

agtcaggggt cagcctcaca ccgagctctc tgccaaaacc ccggatcaca agcatgagct   900

ccagcaggtc cgcttgagtg aacaccgctg atcctgcctg caggggtata ggcctggggc   960
```

ctgccagccg tccgcactgt ctgtggggtg tttttgggttg caggttccat gtcctgaagc 1020

aggagagccc tccccatgcc acctcctctg cccagcctct tagggacagt gcctgagatg 1080

ccctggctgg agtgaggact ggggtgtgct ttcagcccat agctggccct gggcataaag 1140

gcatctgctg tggtgctgca gccaaggcca ggctgtgctc tgtgcttgtg tcggggagcc 1200

cttggcagtg gccaccccac aggtggcttt ttattccctc ctgctgctga gtgtcacgcg 1260

tggggctgag ggcctgcacg ccttcccggc ctcatcctct ccgacgattc acgccctcct 1320

aaggctggca ggataggagc catgctcccc tggggtggct ctggaacgtg gccccgtgc 1380

acaggctatg tagtctgctc acacccttgc tgcctgccac ccgggcaccc aggacttgag 1440

cccagaccct ggccaccctg ttgttgtggg agtattaggg gaagttgcca ctaaggctgg 1500

caggtcctgg agttccaccc aggatggggga catggggggag ggaagaggag gtgcccctca 1560

gagcctgagg ccaggaccaa gtggggtgat caggacccct ccaggtgggt cccggggtgcg 1620

gatggccagt tgggcgcatg cttattgggc ctgcatccgt tggccacgga ggctctttgg 1680

gacaagcaaa tagaatgccc cagaaataaa cttggcccaa gtttgtgacg gttctgggta 1740

tgaaagaagt cagtgtttcc caagtgcctg ctatgtgcga ggctctgtgc tggggcgggt 1800

gcatgtgtgc gttggggggcg tggacaggag gggtgggaaa ggcctgtgac atttcctctg 1860

gtggtttcca cgaacccagg cgtcacccct cggtggagat aaagtggagc cacccagctc 1920

caccgtgtct cagcctgggg tcggcctctg ctgcttctgg actcagtgac cctgggctgt 1980

cagggagctt ctgagccttg gttttcctgt cgagtaagat ggaggtaatc gtgtcttatg 2040

gggttgtttt gagggttaaa tgagctggtg gctgtgtggg aaagagctct gcctcccgca 2100

gggaggaact gtgctgttct tattattgtg aacttagtga caagtgtggc actattaccc 2160

atttccttgt ctgcccccaa ccctgggggtc ttgggcagag aacaggagtt cttgccattt 2220

tctcccagct cccaccttgt gctggcttgc gggtgctgag gtcatatttg ctgggtgaaa 2280

gggtgcaggc cagatatgag ccaggcctgg cagagagggt tttggtcagc agtgatacct 2340

gcagtgttct ctgcagttgg tttgggctgg ccctgctcct gagaactcct gggttgtccc 2400

ttcaggcaac cagggaaggc tccttggagc agcagcatct ccccttacca ctcgccgaca 2460

ccagctcccg cctgacccag agaaggagtt tggggacagc cacagcacgt ccagggctcc 2520

caaggcagct ggcagagcca atgaggagac cccaacaccc atccgacggc tgcagctctc 2580

cctgacgtgt gtcacccgca gccctggtcc cagccgctgt gcttctcagg gcctgcctgc 2640

ccagcccggg tggatatggt gcccaggcgg gccccgggga cacaatgagg gccattctca 2700

```
gagccaggca gagcgtgtgg ggctgtcctg tcagtcctat gtgcaacagc tgggatattg  2760

tttagggagt gctggcatca ggctggggct ctcctcctct ggccctgccc tttgggatga  2820

gcaagccccc aaaggccttc ctgggttcct ctggtgcacg tgccctggag ttacccttct  2880

gaaggaggta gacttgtcct cctgtcctgg gtgcctgggg tgcaggggtg tgaattgggc  2940

tatgtcaaga tatgctgggc agtactgtga ggtggggggca gaggggagaa ggtgtcccag  3000

gaggagcctt cctggagggg atgatagtcc agcatgttct gaagtgggag tagggtgcgg  3060

caggagtagg gtaccagaga atgagtgagt caggcagcag cctccactgc gccttggaca  3120

caggtggctg acagtgtcca cctggactgg ctttgcaccc cttctgaggt cacagttgtg  3180

tcccttgaaa acttgggcag gagcacctga ctggcccagc ttgggtcatg ccctaggccc  3240

agcagtgcgg gaggccagga aagtaggctt ggggaggctg gcctctcctc cagtttgaag  3300

catggcaggg gttccggggg aggctgctgg ggggcctgcg agcatgtcca gagcaggaat  3360

gcttggggtg gtgtgtactt tgctcgtctg ggcttatctg gccgtgggga agctggttgt  3420

gcggatgacg ttcactgagc tgtgcacgca tcatccatgg agtctgcggt gtgagtcctt  3480

ttgccgctcc agggtcacag cctgcctccc tgctccagcc ccctggctga ggcccttcct  3540

ctgccccatg ctcttctcag acaggaatcc tgtggaatgt catctctttg gggaggccgt  3600

ctctgaccct gtatgcaaag gccttctccc acattatttt tggcacccca ctttcttccc  3660

cgtgaaagca aattgtttgg tgtctttctg tcccactaca gtataggccc ggttcagaca  3720

gaggccttgt ccactaggcc tgcgctatct ctgcggagcc cagccaaagc aggggccagg  3780

cgaatctttt gttaaaagaa caatgcgcgc tgggcacagt ggctcacgcc tgtaatccca  3840

gcactttggg agtccgaagc tggaggatca cttgagccca agagtttgag accaccctgg  3900

gcaacataag gagaacccat ctctacacaa aattagctgg gcgtggtggt gtatgcctgt  3960

agtcctagct acttgggagg ctaaggtggg aggtggctga ggtgggagga tcacttgagc  4020

ctgggaggtt gttgcagtga gagccatgat cgcgctactg ggcaatagag cagaacccag  4080

tctc                                                              4084
```

<210> 406

<211> 3862

<212> DNA

<213> Homo sapiens

<400> 406

```
attcacactt gcaggcgtgc aggtcggtgg tgttacacac attcacactg ttgcaggcgt    60

gcaggtccgt ggtgttacac acatgctgtt gcaggcgtgc aggtcggtgg tgttacattc   120

acactgttgc aggtgtgcag gttggtgtta cacacattca cactgttgca ggcttgcagg   180

tcggtggtgt tacacacatt cacacttgca ggcgtgcagg tcagtggtgt tacacacatt   240

catgctgttg caggcatgca ggtcggtagt gttacacatt catgctgttg caggcgtgca   300

ggtcggtggt gttgcacatt catgctgttg caggcatgca ggtcggtggt gttacattca   360

cgctgttgca ggagtacagg tcagtggtgt tacacacatt catgctgttg tgcagctatc   420

acttccatct ccagagccct tttcatctta aaactgaagc tctcccatca cacagtgacc   480

cttcatgtcc ctccccagtc cctgaaaaac actgttcagg tttttcttcc tggacctcat   540

tgtgtggagt tcctcgtgtg agtgcagtca cacacgattt gtcctttttt ttttttcgtt   600

tgttgagaca gagtctcatt ctgtcactca agctggagtg cagtggcgtg atctcagctc   660

actgcaacct ccactcccag gttcaagtga ttctcctgcc tcagcctccc aagtagctgg   720

gattacaggc gcctgccacc acgcccagct aattttgtg tttttattag agacagggtt   780

tcaccaagtt ggccagactg gtctcaaact cctgacctcg tgatccaccc gcctgggcct   840

cccacagtgc tgggatgaca ggcgtgagct accacacccg gctgatttat ccttttattt   900

gggctccttt cactcagcgt ctttaagctt catacgcgaa agatgcttca gagattcctt   960

tttcaggctg aatatctgct gcgtggctag gccactttt gtttaatcct ctctcctctg  1020

gtggacacca ggactgtgct gttttggttg ctgtaagcgc gggtgcacac gcctgcctga  1080

ggctgtgttt tggccgttgt gagtgtgggt gcacacacct gcctgaggct ctgctttgtt  1140

gtgagtgcgg gtgcacacac ctgcctgagg ctgtgttttg ggtgttgtga gtgtgggtgc  1200

acacacctgc ctgaggctgt gttttgggtg ttgtgagtgt gggtgcacac acctgcctga  1260

ggctgtggcg cgatctcggc tcactgcaac ctccacctcc cgggttcaag cgattctcct  1320

gcctcagcct cccgagtagc tgggaccaca cccaccacca cacccgtta ttttttgta  1380

tttttagtag agatgggggtt ttgccatgtt ggccaggatg gtctggaact gacctcaggt  1440

gatccaccca ctggcctccc aaagtgctgg gattacaggt gtgagccact gtgcccggcc  1500

tctttttact ttgttaatgg tgtattttga tagataacag attgtcattt tcatgaagca  1560
```

cagctggtca gtttattgtt gctcatgtat ttggcctcat gttcgagtcc ctgtttttaa 1620

tcatgagctg gacacagccc tctttagagc aactgtgacc acttgtggtg agaagtgcag 1680

cccacaccat ccacgtgagg ctcccatgca gacatttaga aggcgttttc actgcagctc 1740

agaaaatggc cccaggcccc catgggcacc cccatgtcac cagggcctct ggttgctgcc 1800

ggtacacagg gataggcagc caggcctcga aggtgctggg catgggtttg ggtgtctgcg 1860

ttgggtagag acccggagcg cccttgctgg gcgtgcccta acatcccggt accctgtgcc 1920

cctctgtggg ccaggacgcc tggtgctgcc agctgggcgt aagccctgag gagctgaggg 1980

tggctgtgat ttggaggatg agtaggagct caccaggagg gcgtggagcc gaggcgttta 2040

atatcatcag gagcaacact gggctcagaa ggcaggcaca cttgccgtcc ctccagagcc 2100

atggctgacg gccaggcctg gtgggctctc gtgaggacag tgcctgtggt tgtcagatgc 2160

tgtcccttcg agtaagggat gagagccatc ctgaagatgg gtcagctctg tggtgaccac 2220

ccgttgggag cagtgacatt caggtgcgtt gcactggtgg ctgtgtggct gtgtggtacg 2280

gccaccagga gccatgtggg caaggacagc tgtgggctgg cacagagct ctctctgctg 2340

ggagtcagtc ggtgctgggg cgaggggagg cagagctcac agagcccctc tacagctcac 2400

cctgcagctc ggccctggcc agtaaaccca ccatccccct ttctgccgca ggaggcagtg 2460

gagaaggtga cacagcacat ccacggcctg tctgggaaga aggatgggct ggtgcccatg 2520

ttcatcaata cccacagtgg cctcttcacc cacctgggcg tattcacgct gggcgccagg 2580

gccgacagct actatgagta cctgctgaag cagtggatcc agggcgggaa gcaggagaca 2640

cagctgctgg aagactacgt ggaagccatc gagggtgtca gaacgcacct gctgcggcac 2700

tccgagccca gtaagctcac ctttgtgggg gagcttgccc acggccgctt cagtgccaag 2760

atgggacgct ggctctgggc gtctaccacg gcctgcccgc cagccacatg gagctggccc 2820

aggagctcat ggagacttgt taccagatga accggcagat ggagacgggg ctgagtcccg 2880

agatcgtgca cttcaacctt tacccccagc cgggccgtcg gacgtggag gtcaagccag 2940

cagacaggca caacctgctg cggccagaga ccgtggagag cctgttctac ctgtaccgcg 3000

tcacagggga ccgcaaatac caggactggg ctgggagat tctgcagagc ttcagccgat 3060

tcacacgggt cccctcgggt ggctattctt ccatcaacaa tgtccaggat cctcagaagc 3120

ccgagcctag ggacaagatg gagagcttct tcctgggggga gacgctcaag tatctgttct 3180

tgctcttctc cgatgaccca aacctgctca gcctggacgc ctacgtgttc aacaccgaag 3240

cccaccctct gcctatctgg accctgccct agggtggatg gctgctggtg tggggacttc 3300

gggtgggcag aggcaccttg ctgggtctgt ggcattttcc aagggcccac gtagcaccgg　3360

caaccgccaa gtggcccagg ctctgaactg gctctgggct cctcctcgtc tctgctttaa　3420

tcaggacacc gtgaggacaa gtgaggccgt cagtcttggt gtgatgcggg gtgggctggg　3480

ccgctggagc ctccgcctgc ttcctccaga agacacgaat catgactcac gattgctgaa　3540

gcctgagcag gtctctgtgg gccgaccaga ggggggcttc gaggtggtcc ctggtactgg　3600

ggtgaccgag tggacagccc agggtgcagc tctgcccggg ctcgtgaagc tcaggtgtc　3660

cccaatccaa gggtctggag gggctgccgt gactccagag gcctgaggct ccagggctgg　3720

ctctggtgtt tacaagctgg actcagggat cctcctggcc gccccgcagg gggcttggag　3780

ggctggacgg caagtccgtc taactcacgg gcccctccag tggaatgggt cttttcggtg　3840

gagataaaag ttgatttgct ct　3862

<210> 407

<211> 3612

<212> DNA

<213> Homo sapiens

<400> 407

aggatgtgct tcaagttaag ttgttactca acggaaaaca tattcaggat gctgcttgct　60

atttgtgtgt tttgttttgt ttgagacgag gtgtcgctct gtcacccagg ctggagtgca　120

gtggcatgat ctcagctccc tgcaacctcc gccttgcggg cttaagcaat cctcccacct　180

cagcctccca gcactttggg aggctgaggt gggaggattg cctgagaaca ggaattcaag　240

acatgcttgg gcaacatagc aagaccctga ctccacaaaa aaaatttaaa aattagcctg　300

gcatggtagt gcacacctgt agtcgtagct actcagaggc tgaggcagga ggaccgcttg　360

agcccaggag tttgaggctg cagtgggcca taatcatggc actgcactcc agcctgggca　420

acagagtgag accctgtctc agaaaaaaaa aaaatggggc tgatatcggt aagaaacctg　480

cctgtgatgt gcagagactg cctatggaca cctgtgctgc catcatcagt gtgaggggag　540

gaggatgggg gaccagggaa tggggaacaa gacagacgtt cttcttcctt tgtgctcttg　600

tgtttctcga gttttctgcc catgtgcaca aattgtcccc tggattcgtc taacagttct　660

```
ccttggtgtc cctgcaggat gaaattgagt ttggctacat cgaggccccc cataaaggct   720

tccccgtggt gctggactct ccccgagatg gaaacctaaa ggacttccct gtgaaggagc   780

tcctgggccc agattttggc tacgtgaccc gggagcccct ctttgagtct gtcaccagcc   840

ttgactcatt tggaaacctg gaggtcagtc ccccagtgac cgtgaatggc aagacatacc   900

cgcttggccg catcctcatc gggagcagct ttcctctgtc tggtggtcgg aggatgacca   960

aggtggtgcg tgacttcctg aaggcccagc aggtgcaggc acccgtggag ctctactcag  1020

actggctgac tgtgggccac gtggatgagt tcatgtcctt tgtccccatc cccggcacaa  1080

aggtaagcta gcctcctgag gctggagtga atggggtagc ggcaaaccaa tatattacca  1140

gccccctgcca gcagagggca agagctagag gaactcgaca gcataaagga aggaggaagt  1200

aggctgaagc tggtttgcat gttgttgctg tggcaggtaa aattttaacc ccataaatcc  1260

aaaatgttag cattgcaaca cataatcagc ctaaaaatta ttaacgagag atttaaattc  1320

ttttctcata ctaaatcttc aaaatctggc aaagatttta ctcacatgac acacctaaat  1380

tcagactagc cacagctcaa gtgttcagta gtcacataag gctagtggct attgtgttgg  1440

cggtaatgct ttagagagaa atagggtatg cacctgtggc actggaaaga ggttctttca  1500

ttttcttatg ggtacgactt cataccctgg aaattctctg caaattgtgt ggctgcttgg  1560

caacttggag atgtcctgtc caagtccacc tttgactctg agccttgatc tggtgacatt  1620

gctgagatag aggaaaggtg agaaatattc ctctgaagca gagaacaccc tccccgtcag  1680

cctttgccac tcggcatggg aggcctgagg caatgagcag gcaaggcact gggtcctcag  1740

cgcagggcct ccccgtgctc cttgggtgcc ttcccactgc tgactctgtc cctctggact  1800

gtctcttgca gaaattcctg ctactcatgg ccagcacctc ggcctgctac aagctcttcc  1860

gagagaagca gaaggacggc catggagagg ccatcatgtt caaaggcttg ggtgggatga  1920

gcagcaagcg aatcaccatc aacaagattc tgtccaacga gagccttgtg caggagaacc  1980

tgtacttcca gcgctgcctg gactggaacc gtgacatcct caagaaggag ctgggactga  2040

cagagcagga catcattgac ctgcccgctc tgttcaagat ggacgaggac caccgtgcca  2100

gagccttctt cccaaacatg gtgaacatga tcgtgctgga caaggacctg ggcatcccca  2160

agccattcgg gccacaggtt gaggaggaat gctgcctgga gatgcacgtg cgtggcctcc  2220

tggagcccct gggcctcgaa tgcaccttca tcgacgacat ttctgcctac cacaaatttc  2280

tggggggaagt ccactgtggc accaacgtcc gcaggaagcc cttcaccttc aagtggtggc  2340

acatggtgcc ctgacctgcc aggggccctg gtgtttgcct ccttcgctta gttctccaga  2400
```

●

```
ccctccctca catgcccaga gccttctgct gacatggact ggacagcccc gctgggagac   2460

ctttgggacg tggggtggaa tttggggtat ctgtgccttg ccctccctga gaggggcctc   2520

agtgtcctct gaagccatcc ccagtgagcc tcgactctgt ccctgctgaa aatagctggg   2580

ccagtgtctc tgtagccctg acataaggaa cagaacacaa caaaacacag caaaccatgt   2640

gcccaaactg ctccccaaag aattttgagt ctctaatctg acactgaatg aggggagaag   2700

ggaaggagat tctgggattg ccagttcttc cagcagccat gctctgaaaa tcaaggtaga   2760

atccatggaa agggacccca ggaccccggg accctagacg tatcttgaac tgccatcgtc   2820

atttcaaata catctccctc agggtttcca ggtggccacc cccaattatt cattccttac   2880

caacctctca aatcctcttg gctttctctc tgcagtgtgg acactgttgg ctagtcctcc   2940

ccactccctg agggtccagt aagttagctt agaaccttcc tggaaacatt tcatctgagc   3000

aggtttcccc acgtgtggga tgctcctttt gcctcatctg tctcagggat gcaggctccc   3060

ccgcatgcat ggggatttct ccccagacca gcatacttgt gacctgagag ttcaatgcgt   3120

aaagatgccc ctggtcagcc atatccatct tctcttgcct ggtccttgat tctctggccg   3180

ctccctgacc ttcctccttc cactgccttg actttcttcc tttttattcc tggtgccatc   3240

tgtccaggca gctagacaag aacttgttca ccagcagccg gattcaggcc ttcccagggg   3300

cataataagt gaccagcccc tcctctccgg acatcagatc caacacataa ggaccctggc   3360

ctaccctcca gcccaacagc cagttctggg tcagctgcca acttaggggt ggtttgatta   3420

tcccattgaa attcaccagt gcctttgcca aagaccctct catttggaca tacccagatt   3480

cattccctgg ctccaactga aaagactcag tttcaatctt taaaagttcc tttagggcca   3540

gaagaataaa tgaattataa tcccattttg aagaaccgat ttataaccaa tgaaaaggtt   3600

ataatgtaat tt                                                       3612
```

<210> 408

<211> 4600

<212> DNA

<213> Homo sapiens

<400> 408

acctacgtgc ggctggagaa tggcgagccc cgtggactcc ccatcatcca agacgtcatg　　60

ctagccgagg cccagtggcg gccagaggag tccgaggact atgaaaccac tatcagcggc　　120

ctgaccccgg agaccaccta ctccgttact gttgctgcct ataccaccaa gggggatggt　　180

gcccgcagca agcccaaaat tgtcactaca acaggtgcag tgtttgccaa gaacttccgg　　240

gtggcggctg caatgaagac gtctgtgctg ctcagctggg aggttcccga ctcctataag　　300

tcagctgtgc cctttaagat tctgtacaat gggcagagtg tggaggtgga cgggcactcg　　360

atgcggaagc tgatcgcaga cctgcagccc aacacagagt actcgtttgt gctgatgaac　　420

cgtggcagca gcgcaggggg cctgcagcac ctggtgtcca tccgcacagc ccccgacctc　　480

ctgcctcaca agccgctgcc tgcctctgcc tacatagagg acggccgctt cgatctctcc　　540

atgccccatg tgcaagaccc ctcgcttgtc aggtggttct acattgttgt ggtacccatt　　600

gaccgtgtgg gcgggagcat gctgacgcca aggtggagca cacccgagga actggagctg　　660

gacgagcttc tagaagccat cgagcaaggc ggagaggagc agcggcggcg gcggcggcag　　720

gcagaacgtc tgaagccata tgtggctgct caactggatg tgctcccgga gacttttacc　　780

ttgggggaca agaagaacta ccggggcttc tacaaccggc ctctgtctcc ggacttgagc　　840

taccagtgct ttgtgcttgc ctccttgaag gaacccatgg accagaagcg ctatgcctcc　　900

agcccctact cggatgagat cgtggtccag gtgacaccag cccagcagca ggaggagccg　　960

gagatgctgt gggtgacggg tcccgtgctg gcagtcatcc tcatcatcct cattgtcatc　　1020

gccatcctct tgttcaaaag gaaaaggacc cactctccgt cctctaagga tgagcagtcg　　1080

atcggactga aggactcctt gctggcccac tcctctgacc ctgtggagat gcggaggctc　　1140

aactaccaga ccccaggttc cagtgtcccc agttgcccga atacctcaag tatgcgagac　　1200

cacccaccca tccccatcac cgacctggcg gacaacatcg agcgcctcaa agccaacgat　　1260

ggcctcaagt tctcccagga gtatgagtcc atcgaccctg gacagcagtt cacgtgggag　　1320

aattcaaacc tggaggtgaa caagcccaag aaccgctatg cgaatgtcat cgcctacgac　　1380

cactctcgag tcatccttac ctctatcgat ggcgtccccg ggagtgacta catcaatgcc　　1440

aactacatcg atggctaccg caagcagaat gcctacatcg ccacgcaggg ccccctgccc　　1500

gagaccatgg gcgatttctg gagaatggtg tgggaacagc gcacggccac tgtggtcatg　　1560

atgacacggc tggaggagaa gtcccgggta aaatgtgatc agtactggcc agcccgtggc　　1620

accgagacct gtggccttat tcaggtgacc ctgttggaca cagtggagct ggccacatac　　1680

actgtgcgca ccttcgcact ccacaagagt ggctccagtg agaagcgtga gctgcgtcag　　1740

tttcagttca tggcctggcc agaccatgga gttcctgagt acccaactcc catcctggcc 1800

ttcctacgac gggtcaaggc ctgcaacccc ctagacgcag ggcccatggt ggtgcactgc 1860

agcgcgggcg tgggccgcac cggctgcttc atcgtgattg atgccatgtt ggagcggatg 1920

aagcacgaga agacggtgga catctatggc cacgtgacct gcatgcgatc acagaggaac 1980

tacatggtgc agacggagga ccagtacgtg ttcatccatg aggcgctgct ggaggctgcc 2040

acgtgcggcc acacagaggt gcctgcccgc aacctgtatg cccacatcca gaagctgggc 2100

caagtgcctc caggggagag tgtgaccgcc atggagctcg agttcaagtt gctggccagc 2160

tccaaggccc acacgtcccg cttcatccgc gccaacctgc cctgcaacaa gttcaagaac 2220

cggctggtga acatcatgcc ctacgaattg acccgtgtgt gtctgcagcc catccgtggt 2280

gtggagggct ctgactacat caatgccagc ttcctggatg gttatagaca gcagaaggcc 2340

tacatagcta cacaggggcc tctggcagag agcaccgagg acttctggcg catgctatgg 2400

gagcacaatt ccaccatcat cgtcatgctg accaagcttc gggagatggg cagggagaaa 2460

tgccaccagt actggccagc agagcgctct gctcgctacc agtactttgt tgttgacccg 2520

atggctgagt acaacatgcc ccagtatatc ctgcgtgagt tcaaggtcac ggatgcccgg 2580

gatgggcagt caaggacaat ccggcagttc cagttcacag actggccaga gcagggcgtg 2640

cccaagacag gcgagggatt cattgacttc atcgggcagg tgcataagac caaggagcag 2700

tttggacagg atgggcctat cacggtgcac tgcagtgctg gcgtgggccg caccggggtg 2760

ttcatcactc tgagcatcgt cctggagcgc atgcgctatg agggcgtggt cgacatgttt 2820

cagaccgtga agaccctgcg tacacagcgt cctgccatgg tgcagacaga ggaccagtat 2880

cagctgtgct accgtgcggc cctggagtac ctcggcagct ttgaccacta tgcaacgtaa 2940

ctaccgctcc cctctcctcc gccacccccg ccgtgggggct ccggagggga cccagctcct 3000

ctgagccata ccgaccatcg tccagccctc ctacgcagat gctgtcactg gcagagcaca 3060

gcccacgggg atcacagcgt ttcaggaacg ttgccacacc aatcagagag cctagaacat 3120

ccctgggcaa gtggatggcc cagcaggcag gcactgtggc ccttctgtcc accagaccca 3180

cctggagccc gcttcaagct ctctgttgcg ctcccgcatt tctcatgctt cttctcatgg 3240

ggtgggggttg gggcaaagcc tccttttttaa tacattaagt ggggtagact gagggatttt 3300

agcctcttcc ctctgatttt tcctttcgcg aatccgtatc tgcagaatgg gccactgtag 3360

gggttggggt ttattttgtt ttgttttttt ttttcttgag ttcactttgg atccttattt 3420

tgtatgactt ctgctgaagg acagaacatt gccttcctcg tgcagagctg gggctgccag 3480

cctgagcgga ggctcggccg tgggccggga ggcagtgctg atccggctgc tcctccagcc 3540

cttcagacga gatcctgttt cagctaaatg cagggaaact caatgttttt ttaagttttg 3600

ttttcccttt aaagcctttc tttaggccac attgacagtg gtgggcgggg agaagatagg 3660

gaacactcat ccctggtcgt ctatcccagt gtgtgtttaa cattcacagc ccagaaccac 3720

agatgtgtct gggagagcct ggcaaggcat tcctcatcac catcgtgttt gcaaaggtta 3780

aaacaaaaac aaaaaaccac aaaaataaaa aacaaaaaaa acaaaaaacc caagaaaaaa 3840

aaaaagagtc agcccttggc ttctgcttca aaccctcaag aggggaagca actccgtgtg 3900

cctggggttc ccgagggagc tgctggctga cctgggccca cagagcctgg ctttggtccc 3960

cagcattgca gtatggtgtg gtgtttgtag gctgtggggt ctggctgtgt ggccaaggtg 4020

aatagcacag gttagggtgt gtgccacacc ccatgcacct cagggccaag cggggggcgtg 4080

gctggccttt caggtccagg ccagtgggcc tggtagcaca tgtctgtcct cagagcaggg 4140

gccagatgat tttcctccct ggtttgcagc tgttttcaaa gcccccgata atcgctcttt 4200

tccactccaa gatgccctca taaaccaatg tggcaagact actggacttc tatcaatggt 4260

actctaatca gtccttatta tcccagcttg ctgaggggca gggagagcgc ctcttcctct 4320

gggcagcgct atctagatag gtaagtgggg gcggggaagg gtgcatagct gttttagctg 4380

agggacgtgg tgccgacgtc cccaaaccta gctaggctaa gtcaagatca acattccagg 4440

gttggtaatg ttggatgatg aaacattcat ttttaccttg tggatgctag tgctgtagag 4500

ttcactgttg tacacagtct gttttctatt tgttaagaaa aactacagca tcattgcata 4560

attcttgatg gtaataaatt tgaataatca gatttcttac 4600

<210> 409

<211> 3637

<212> DNA

<213> Homo sapiens

<400> 409

tctttctttta tttccttctc ttttcaaggt ggagtcttgc tcttgtcacc caggctagag 60

tgcagtggtg tgatcttggc tcactgcaac ctccacaccc tagattcaag cgattctcct 120

gcctcagctt cccgagtagc tggggcgtgt gccaccgtgc ccggctaatt ttttgtattt 180

ttagtagaga tggggggtttc accatgttgc ccaggctggt cttgaactcc atacctcagg 240

tgacccaccc accttggcct cctgagtagc tgggattaca ggcatgagcc accgtgcccg 300

gcccaagcca agattcatgt tggacctgaa ctcatgcagc aagcagtccc tgagcacata 360

ttccgcacca gagttgatgt tagctaacag gggcccatgg aggaacaact cgggttttgt 420

cctcagggaa atcccctgtt ggatagggga ggcagatgga ggcactgaag gtttccagct 480

gtcgcctcag gaggaagtcc agggcaccca agggcccagg gaaggaggca gtcagcctaa 540

atgaggccag gggcagtgtc aagcctagct ttaaggctct gagtttggga tggagccctg 600

cgaggtggca ggggtcagag tggaggtggg catcccagga gaagggcatt ttgccagcac 660

agaaggggtg gaacagcctg ggtagttcag agaacaggag acagcttggt tggaagctgg 720

ctggctggtg gtgagggtgt gggctggagg gtgggcacgc tgctgttaat gaggccacag 780

gatctcatgg gaaaggcaac aacaagcagt cacaggggct cggagctgga gagtgacaca 840

ctcagctttg ccacatggtg ctgatggaca tcagacggag acttccagca atctgttggt 900

tttgcaagtc tgaagctccg ggcagagctg agcctgctcc tccagatgga gcaggtgcgc 960

cggatccccg aggaatactc tctggggcgg atggcagaag gcctgagcca ccacgacccc 1020

atcatgaagg tgctgtccat tcgaggcctg gtcatcctgg cccgcaggtc tgagaagacc 1080

gccaaggtga aggccctcct gccctccatg gtgaagggcc tgaagaacat ggatgggatg 1140

ctggtggtgg aagcggtcca caacctcaag gctgtcttca aggggcggga ccagaagctg 1200

atggacagtg cggtctatgt ggagatgctg cagatcctgc tgccgcactt cagcgacgca 1260

cgagaggacg tgcgctcctc ctgcatcaac ctgtatggga aggtggtcca gaagcttcgg 1320

gcaccacgca ctcaggccat ggaggagcag ctggtcagca ccttggtgcc cctactgctg 1380

accatgcagg agggcaactc caaggtaagc cagaagtgtg tgaagaccct gttacgctgt 1440

tcttacttca tggcttggga gttgccaaaa agagcttata gccggaagcc ctgggacaac 1500

caacagcaga cagtggccaa aatttgcaag tgccttgtga acacccaccg agacagcgcc 1560

ttcatattcc tcagccagag cctggagtat gccaagaact cacgggcctc cctccggaag 1620

tgctcagtca tgttcatagg gtccctggtc ccctgcatgg agagcataat gacagaagat 1680

cgtctgaatg aagtgaaagc tgcaactcct agagggcaga gatttcatct gctctgccca 1740

ccgctatata gccagccact agaacaggcc ggaagcgcag aaagagctaa gaatttgaaa 1800

aggtccccct atttatgacg agagcgccat cagaaattga tcccagggag aatcctgact 1860

```
tggcttgtct ccagtcaatt attttttgatg aggagcgttc tccagaagaa caggccaaga  1920

cctataaaga tgagggcaat gattactta aagaaaaaga ctacaagaaa gctgtaattt  1980

catacactga aggcttaaag aagaaatgtg cagatcctga tttgaatgct gtcctttata  2040

ccaaccgggc agcagcacag tactatctgg gcaattttcg ttctgctctc aatgatgtga  2100

cagctgccag aaagctaaaa ccctgccacc tcaaagcaat aataagaggt gccttatgcc  2160

atctggaact gaaacacttt gccgaggccg tgaactggtg tgatgaggga ctgcaaatag  2220

atgccaaaga gaagaagctt ctggaaatga gggctaaagc agacaagctg aagcgaattg  2280

aacagaggga tgtgaggaaa gccaacttga aagaaaagaa ggagaggaat cagaatgagg  2340

ctttactcca ggccatcaag gctaggaata tcaggctctc agaagctgcc tgtgaggatg  2400

aagattcagc ctcagaaggt ctaggtgagc ttttcctgga tggactcagc actgagaacc  2460

cccatggagc caggctgagt ctagatggcc agggcaggct gagctggcct gtgctctttc  2520

tgtacccaga gtatgcccag tcggacttca tctctgcttt tcatgaggac tccaggttta  2580

ttgatcatct aatggtgatg tttggtgaaa caccctcttg ggacctagag caaaaatatt  2640

gccctgataa tttggaggtc tactttgagg atgaggacag ggcagaacta taccgggtgc  2700

ctgccaagag caccttgcta caggttctac agcaccagag gtactttgta aaagccctga  2760

caccagcatt tttggtctgt gtaggatcct ctcctttttg caagaatttt ctccggggga  2820

gaaaggtgta ccagatacga tgactaagcc agggcccctg gatctcctcc cttaccctcc  2880

tctgctggga acctagcaca cctgaatcag ctggacatac tgctggagtc cagtgctttc  2940

tttccgtcac cctgggata gtccttcctg gcatcgtggt ggggggaggag cctctggctt  3000

ccctaaactg cagcctctct ggctggtctt cactttcctc agttgatata aaactctggg  3060

tcttggccat gatgtccttg gactccatcg ctaaagggac catctgctgc agttaccaca  3120

gcaactgacc tgagcggcac cctggtctgt ggagatggac tcaggatcca gtgacatgat  3180

tctgaacttt tgtggagttt gacaccttag agaagctacc cctcaaactg cacatctaca  3240

cacaaacaaa caatgcatag gattccaagg ctttaaagct gagagaccct ggcctcaagt  3300

tatttcatgc gcacagaggg aagccatgtg gggttgctga agatgccttg aggtgaaatg  3360

ggggcaggaa agccacatct tgctctgcat ttataaagac cgtacaaact gagatccttg  3420

gtacccctaa aaagattgcc aattttcttc atctttgcca tatggaggac tgtgacagac  3480

tttggacagt ggcctcttga gttcctctgc agttttgaca tttaggattt tgtgtctttt  3540

aaactggaaa atcttctagc atgttgggtt gttacagagt atattttgt ctgcagctgt  3600
```

ttgttgcccc attcctaaga ggagtttatc catcctg   3637

<210> 410

<211> 3387

<212> DNA

<213> Homo sapiens

<400> 410

ttccaagcga actggccaat gagatccccg tgtgagtaga gctcggcgcc ccccgctccc   60

tctcactccc actcctccat ccttcctggt ggggagcaga gtccggagcc cccggggaac   120

tttccatccc ttgtggcgga ggatggggggt ccggcgctat ttggctgcaa gaggccgttt   180

cctgcctcag aagtgcagtc gcccctccca gggcacaggc cgagggtcgc cccacagcca   240

acccccacca ctgaggctgt acacacctgt gcgcatatgc atgcatgtct gtgtccgtgt   300

gcacgtccgc gtgtgtgaac atgcagctgt gtctgtgcgt gtctatgtat atggagtgga   360

tgtgcaagtg tgtgtgaata tccagctgtg tgtgtgcatg ggtccatgta tatgtgtgtg   420

tgtatatgtg gggggggacat gtagatatgc gtgtgtgact atgcggccgt gtgtgtgcat   480

ggctccatgt atgtgtgtgt atatgaggga gacatgcagg tatgtgtccg tgtgtgtgtg   540

tgtgtgcata tgggtccatg tatgtgtgtg tatatgaggg agacacgcag gtgtgtgtct   600

gagtgtgtgc gcacatgggt ccatgtatgt gtgtgtatag gtgagggaga catgcatgtg   660

tgtgtccgtg tgtgtgcatg ggtccatgtg tgtgtagtgt gtacacatgg gtccatgtat   720

gtgtgtgtat atgagggaga cacgcaggtg tgtgtccgag tgtgtgtgca tgggtccatg   780

tgtgtatagt gtgtgcacat gggtccatgt atgtgtgtgt atatgaggga gacacgcagg   840

tgtgtgtccg agtgtgtgtc catgggtcca tgtatgtgtg tgtatatgtg ggggagacag   900

gtgtgtgtcc gagtgtgtgc atgggtccgt gtatatgcgt gtatatatgg ggggatatgt   960

agatgtgtgt gtgtatgaac aggtgtaagt ggggagcact caggtgtgtc tgtgtgtgtt 1020

cgtgtacacg tgtgtatatg tgtgaacatg gaggggtgtg tgtgtccgtg tgtaggtttg 1080

cgtgcatgca cacatgcatg tgtgtactgg ggcatccaag cccctggtct ccactccatt 1140

ccaccctacg cctacctcct tgatctctgc gcccagcctt ggctgtgctc ccctgctgtc 1200

●

```
tgcacgtggg tgtctgcacg tgggtgtctg catgtgggtg tctgtgccct caagtgtctc  1260
gtgtctgcac gtgggtgtct gcaccctcac gtgtctcgtg tccgcacaag catgtgtagg  1320
tgtccctgct gggctctttg gtgggcggcc agtgatcctc gaggtcacgc atgtcttctg  1380
tgggtgcctg ctccttgcac cccacagtgt tgagatgggt ttgcattggc cccgcctgtc  1440
ccctgctcac ccgcctccct ctcttcctgc ttctaagccc cgaaactctg gattccgggg  1500
cccttcacag gtgagcacgt ggcagcagtg cctgcagacc cctggctggc ccatctgtcc  1560
tcccgcccct ctctctgatc tctctctgcc aggctgcccc tgtctccatc cctcttctcc  1620
ctcccactgt cggtgtctgc ccaccagcca cccctgggtc ccgtcacagc ccttgtggcc  1680
tccgcagctg gggcccttgt cctcccgcct cccccaccct gtcctgttgc caccttccta  1740
gaggccctga cctgccctct gccctccagc gagaaggcac tgcagagcaa ccactttgaa  1800
ctgagcctgc gcactgaggc cacgcagggg ctggtgctct ggagtggcaa ggccacggag  1860
cgggcagact atgtggcact ggccattgtg gacgggcacc tgcaactgag ctacaacctg  1920
ggctcccagc ccgtggtgct gcgttccacc gtgcccgtca acaccaaccg ctggttgcgg  1980
gtcgtggcac atagggagca gagggaaggt tccctgcagg tgggcaatga ggcccctgtg  2040
accggctcct ccccgctggg cgccacgcag ctggacactg atggagccct gtggcttggg  2100
ggcctgccgg agctgcccgt gggcccagca ctgcccaagg cctacggcac aggctttgtg  2160
ggctgcttgc gggatgtggt ggtgggccgg cacccgctgc acctgctgga ggacgccgtc  2220
accaagccag agctgcggcc ctgccccacc ccatgagctg gcaccagagc cccgcgcccg  2280
ctgtaattat tttctatttt tgtaaacttg ttgctttttg atatgatttt cttgcctgag  2340
tgttggccgg agggactgct ggcccggcct cccttccgtc caggcagccg tgctgcagac  2400
agacctagtg ctgagggatg gacaggcgag gtggcagcgt ggagggctcg gcgtggatgg  2460
cagcctcagg acacacaccc ctgcctcaag gtgctgagcc cccgccttgc actgcgcctg  2520
ccccacggtg tccccgccgg gaagcagccc cggctcctga atcaccctcg ctccgtcagg  2580
cgggactcgt gtcccagaga ggaaggggct gctgaggtct gatggggccc ttcctccggg  2640
tgaccccaca gggcctttcc aagcccctat ttgagctgct ccttcctgtg tgtgctctgg  2700
accctgcctc ggcctcctgc gccaatactg tgacttccaa acaatgttac tgctgggcac  2760
agctctgcgt tgctcccgtg ctgcctgcgc cagccccagg ctgctgagga gcagaggcca  2820
gaccagggcc gatctgggtg tcctgaccct cagctggccc tgcccagcca ccctggacat  2880
gaccgtatcc ctctgccaca ccccaggccc tgcgaggggc tatcgagagg agctcactgt  2940
```

gggatggggt tgacctctgc cgcctgcctg ggtatctggg cctggccatg gctgtgttct   3000

tcatgtgttg attttatttg acccctggag tggtgggtct catctttccc atctcgcctg   3060

agagcggctg agggctgcct cactgcaaat cctccccaca gcgtcagtga aagtcgtcct   3120

tgtctcagaa tgaccagggg ccagccagtg tctgaccaag gtcaaggggc aggtgcagag   3180

gtggcaggga tggctccgaa gccagaaatg ccttaaactg caacgtcccg tcccttcccc   3240

accccatcc catccccacc cccagcccca gcccagtcct cctaggagca ggacccgatg   3300

aagcgggcgg cggtgggggct gggtgccgtg ttactaactc tagtatgttt ctgtgtcaat   3360

cgctgtgaaa taaagtctga aaacttt   3387

<210> 411

<211> 3705

<212> DNA

<213> Homo sapiens

<400> 411

atttccttaa atgccttaaa gctagtagtt gcaaacttgg gatatgaact tgcttctgtc   60

tgtcttgaaa gtctgttctc ataaccattt taccatgttg tcttgttttc gagtagggca   120

aaatggttaa aggaaaagta gattaaaaga aaaggataaa tatctttgga gtcatcctac   180

gcactggtat tataaagatg aatgagacct gatccttatt gtctagcaag agagacaaac   240

acccagtttc taagcacaat aatagagaca aggagaattc agagatgtca tgtgacttct   300

gggtttcttt ttttttttcc tgagacagag tctcgcactg tcactcaggc tggagtgcag   360

tggcgcggtc tcagctcact gcagcctctg ccaggttcag gctattcttc tgccccagcc   420

tccctactag ctgggattac gggtgcctgc caccacgtct ggccgatttt ttgtattttt   480

ggtagagatg gggtttcact gtgttggcca ggctggtctc gaactcatga ccttgtgatc   540

cacctgcctc agtctcccag ggtgctggga ttacaggcgt gagccaccac gcccggccaa   600

attctgggtt tcttgaaaaa taaacaatgt tttcagggag aggagaaagt gtggataagc   660

catggaaagg gtctgatatt tatttgaagt acattatctt gtgggcagag gtaggaaatg   720

aaacaggttg gggccagatt aggccaaatt aagaagaacc tggattggta tgagaaaatt   780

```
ttttttctgat atccagtatt agttattgta aatgcaataa ttaaaacctg gctatggccg   840

ggcaccgtgg ctcacgcctg taaaccaggc gctttgaaag gctgaggtgg gaggattgct   900

tgagcccagg agtttgagac cagccagggc aacaaggtga gatcctgtct ctacaaaaaa   960

aaaaagaatt ggctgggtgt ggtggcttgc gcctgtagtc ctagtacttg ggaggctgag  1020

gtgagaagat tctttgagcc taggagtttg aggctgcagt gagttgtgat cgtgccactg  1080

cattctagcc taggtgacag agaccctgtc tcaaaaaaaa aaaaaaaca aaaaaaaact  1140

tggctacaac cttagttagg ctattttcat gttgcatttt gggctttata agaataaagt  1200

gtccatcagg aaatttctga agaagcatca tttattgtca taaacaggag ccctaagcag  1260

tgtcagatga cagtacttaa ggatggatag acaatagaga gattgcagta atttgtttta  1320

aggaacgcaa agatggtgtt gtgttgagca gttttaaatg ttctgggcat tgttctcatt  1380

ttactgctta aatgagcagt atttcaaatt tgtatattaa aaagcagtat tttaaatttg  1440

tgtatgcagc agttttttat agctatgtat aagtgccttt aaactcaata accttttttt  1500

ccccgtattc aatagtgaat tgaatgcagg aattataaaa acagatcaaa actatgaaaa  1560

gatgatgttt aaagaagctt tgaaaacagg gttttttgag tttcaggtag gctgttgatt  1620

cttttggtag ctataaaaca tgtcaatgtg aacattatgt attttccccc ttttttcttc  1680

ctgctatagc acaattactc gcctaaagtg tagactgaaa atcctgccag aaaaattta  1740

aattcttcaa taaattgtga ttttaagtta ttatctttgg tattttttct attgtgtcca  1800

tttaatttaa taattctgct cctagttaag ctatgagcat taatataaag gagattaaat  1860

ctaaaattca gctatacttt ccaggaaaac atttcaaaat tgataaaaac aaaggcaaaa  1920

ttgtaattaa ttgccattaa tttgagagca agcgttttct gaggttttcc acaaggtgtc  1980

agtatttcct caagtttggc atttaaagtg cttaaagtaa aaatgtagct ttacgcaatg  2040

agctgtgtaa aatatcacat tgagttttat ataacttggt tttcagagtt gtggttaaat  2100

aaggataaat ggctgggcat agcaatgtgt tgtatttata gtctttttttt atatttaata  2160

tcctatatgc tgctaagagc agtcacccct aatatacagt taaagttgtt caactttttat  2220

gtctcagtta caaactgtct gtaaaaaaat tcttttttttg agaattatta gtataaaact  2280

gccatatact ttggacaaag ataaatactt gcagattctt aaagtaaaac ctttacagta  2340

atttgttatg gattttttaaa agactagaaa cttaaaaatg tgttaaaacc aagatactgc  2400

aattttttccc tttattttta ttttaaagaa ggtgagggaa atggtaaata atttcaaatt  2460

ttataggccg caaaagataa gtaccgtgaa ttggctgtgg aagggatgca cagagaactt  2520
```

```
gtgttccggt ttattgaagt tcagacactt ctcctcgctc cattctgtcc acatttgtgt   2580

gagcacatct ggacactcct gggaaagcct gactcaatta tgaatgcttc atggcctgtg   2640

gcaggtcctg ttaatgaagt tttaatacac tcctcacagt atcttatgga agtaacacat   2700

gaccttagac tacgactcaa gaactatatg atgccagcta aagggaagaa gactgacaaa   2760

caacccctgc agaagccctc acattgcacc atctatgtgg caaagaacta tccaccttgg   2820

caacatacca ccctgtctgt tctacgtaaa cactttgagg ccaataacgg aaaactgcct   2880

gacaacaaag tcattgctag tgaactaggc agtatgccag aactgaagaa atacatgaag   2940

aaagtcatgc catttgttgc catgattaag gaaaatctgg agaagatggg gcctcgtatt   3000

ctggatttgc aattagaatt tgatgaaaag gctgtgctta tggagaatat agtctatctg   3060

actaattcgc ttgagctaga acacatagaa gtcaagtttg cctccgaagc agaagataaa   3120

atcagggaag actgctgtcc tgggaaacca cttaatgttt ttagaataga acctggtgtg   3180

tccgtttctc tggtgaatcc ccagccatcc aatggccact tctcaaccaa aattgaaatc   3240

aggcaaggag ataactgtga ttccataatc aggcgtttaa tgaaaatgaa tcgaggaatt   3300

aaagaccttt ccaaagtgaa actgatgaga tttgatgatc cactgttggg gcctcgacga   3360

gttcctgtcc tgggaaagga gtacaccgag aagacccca tttctgagca tgctgttttc   3420

aatgtggacc tcatgagcaa gaaaattcat ctgactgaga atgggataag ggtggatatt   3480

ggcgatacaa taatctatct ggttcattaa actcatgcac attggagatt tatcctggtt   3540

tcttaggaat actactactc tgattgtgtc tactgattgg ctatcagaac cttaggctgg   3600

acctaaatag attgatttca tttctaacca tccaattctg catgtattca taattctatc   3660

aagtcatctt tgattcctgg acctaataaa tttttttttcc ctttc               3705
```

<210> 412

<211> 4211

<212> DNA

<213> Homo sapiens

<400> 412

```
tactggtgca aatcaaagca gaatggctgt gtccaaaacc gtgcttattc cacctgaact     60
```

```
gaaaactgta gaaaaaccaa atcccaatat aaagacaaca caggtatttg acataaatgg   120

aactgatgtt actccccgac ctctttacca tccagatcca cttactggta cagcaaaacc   180

aagtaaactc ttgacatcac aagaaggatc acttggatca gaatttatat cttcctatag   240

cctttatcag aatacaataa atcctagtac gttagggcag tttacaaggt cagttttagg   300

aagcagtaca gtttctaagt caagtgtatc agcaagtgaa tcaatagcag aagacctgga   360

agaaccatcc tataaacggg aaagattgac tagtttcaca ggtaatgaaa atatacttgt   420

ttatttcagt aacagtccgt tatttagtca atatgcttat tattggttgg atacttgaga   480

taaaagaaat atggtaatga tttccaaatg ctggcttgtg aagtcgcttc aagagaatta   540

ccaggggaat atctattttt ttaagttccc tgggtgactg ttttgaatca tcagcctgag   600

gaaccaatgg cgctttgtgt tagagctcag ctgctgcttc tgctgctgct gttgctgctg   660

ctgcttctgc ttcttcttct tcttcttctt cttcctcttc ctcttcttct tcctcttcct   720

tttcttcctc ttcctctttt cctcttcttt tcctcttctt cctcacttct tcttcctcct   780

cttcctcttc ttcctcttcc tcctcctcct cttccttctc cccctcttcc tctccctcct   840

cctcctcccc ctcctctcct tcttcttctt cctcttcctc ctcttcctcc tctgcttcct   900

tctcctcttc ctcttcttct tcttcctctt cttctttctt ctttcctctt ttttttattt   960

tgagacagag tcttgctctg tcacacaggc tggcgtgcag tggcacaatc tcagctcact  1020

gcaacctccg cctcctgggt tcaagcaatt ctcctctctc agcctcccaa gtagctggga  1080

ttgcaggtgt ccgccaccat gcctggctaa ttttttgta tttttaatag agacgggggtt  1140

tcatcatgtt ggccaggctg gtttcaaact tctgacctca aatgacttgc ctgcctcagc  1200

ctcccaaagt gctgggatta caggcctgag ccactgtgcc tggcctcttc tttcttcttc  1260

ttctcaggat ctcactctgt cacccagact ggagtgcaat cttggctcac tgcaacctct  1320

gcttcctggg ctccagcgat cctcccacct cagcctctga agtacctggg aatacagtca  1380

gagaaacaag aattatgaag tcctttgtag aaacagatta ggcaatgacc tatatgttga  1440

aaggatgatg cagactttca atggagcacc aaagaataaa gatgttcaat gtgataaaat  1500

cataatggaa gataaaggca taatgtccac tgcctgggat ttgtatgatt cttacaatgc  1560

tatggaactt gtatctttat cagtaaaaca atctgtggtt gagtcaagca gtaaagcaaa  1620

tgtacttcct aaagatcagg accaaagatt gccagggagc actacagaaa aaaatagtga  1680

aactagttct ctaatggaca tagaaaatgt aattctggca aaaatccatg aagatgagga  1740

agaccactca gatgcaatat taaaatctga caaatttcat caggacttat tttttatgga  1800
```

```
acgggttctg atggaaaata tatttcagcc caaacttgca gcttatcgtc agcttcctgt  1860

tttaaaagaa cctgaacctg aagagcctga agatgtttta gaaagtgcaa aacatgaaga  1920

ggtagaggaa gaatctaaga aggaggagga agaagaaata catgcagaag aatcaacaat  1980

acccgccaac ttggaacgac tttggtcttt ttcctgtgac ttaaccaaag gcctcaatgt  2040

gagcagcctt gcctggaata aaacaaatcc agatcttctg gctgttggct atgggcactt  2100

tggatttaaa gagcaaaaaa gaggactggc ttgctgctgg tcaataaaga tcccatgtg  2160

aatcacctca aaaacatttg ggacctgtat ggcaactaca gtggatagaa caagatcgag  2220

gaacaacagg agatggcaaa agagaaatac tagtttctat atcagcagat ggaagaatct  2280

ccaaatgggt tatacgaaaa ggactagact gttatgattt gatgcgatta aagagaacta  2340

cagctgccag taacaaaaaa ggaggggaaa aggaaaagaa agatgaagct ttgatatctc  2400

gacaggctcc tggaatgtgt tttgcttttc atcccaagga cacaaatatc tatttggctg  2460

gcactgaaga aggtcatatt cacaaatgtt cttgttcata taatgaacaa tacttagata  2520

cctacagagg acataagggt ccagtgtata aagtgacatg gaatccattt tgtcatgatg  2580

tatttttaag ctgttctgca gattggggtg ttattatatg gcaacaggag aatgtcaagc  2640

catctttgag tttttatcca gctacttctg ttgtttacga cgttgcctgg tctccaaaat  2700

catcctatat acttgcagct gcaaatgaga acagggtgga gatttgggac cttcatatca  2760

gcactttgga ccctctgatt gtgaatactg ctaaccctgg aatcaagttc acaaccattc  2820

tctttgccaa acaaacagat tgccttctgg taggagacag tgatggacag gtttctgtgt  2880

atgaactgag aaatatgcct actgttttgg aaactggccg gggagatata atggatactt  2940

tgcttggatc caagtcaaac caatcagcat aattcatcat tcctaatatt tttcttgtag  3000

ttgttttaaa aaaggaatta acatccagta ttctgtatta catactgtac accagatttt  3060

gatttcagaa aacaatattt gatgtataac ttccacttaa tttaaattta ataaactttt  3120

atttcagaga tatttgatta gtttacaatc taagagttat tcttaagagt ttcagtggaa  3180

ttttcttaat ttttctaaag atattcctac tctcttgatc atattctaag tacatatgag  3240

tacatgtaca ttcttataca atgtctaaat gggttagaaa attattatac ctatagaagc  3300

gaaacttgga aattaataga atcacttaaa ccaaaatctt tataagacac aattctattg  3360

attttaaagc ttctgctttc caggctctgt tttccagagt ttataattac gtagttttta  3420

gtagatgaaa ataatggatt cttgtaccta acattttatc ctcttagatc taagagccga  3480

agctatagaa ctttgttaga ctatttggca agcaaaatat atgacagtaa atatcagaac  3540
```

tttatggttt gaccagcgct tatcacattc ccaattcagt gagaaaaatt catctgggac 3600

acaacagggt actcttctct gtttgcccag aatcagctct ggattttaag cccagacttc 3660

agtggaccca gatagaaaat ataaagtctc tgatctatag gccacatcag gatgttattt 3720

tatgaagagt tctagagcaa ggttgcggaa atcggggtgg agatggggag cagtgactcc 3780

tccaaatatt cattgctaac aggccattct atgcagtttg ttttaacaaa tcctgggtta 3840

aactgaggcc acaggacatg atgggctgtt ctataaagca ttctaagtgg agaggagacg 3900

atagggcata tgaaattcac taaactctct ggaaaaaaaa tatgtatata ttaaaaacca 3960

agactggaat cagtgcaaca gtgggaacta ccttttacaa gtatccattg cttcataaac 4020

tccatttgtt tggaccaatc ccttaaacaa aagcaaggca aattttacat ggatttagag 4080

cctaggtcag gttattagga ttataaattt tccactggta tgtcattgtg attatctttg 4140

tttttgtctt tctgaaagat tggattttct ataacacctt gtgtaagaaa ataaaaaact 4200

tgatctaact g 4211

<210> 413

<211> 3666

<212> DNA

<213> Homo sapiens

<400> 413

atggacagcg acgacgtccg ccaggcggcc cggctgctgc tgcccggcgt ggactgcgag 60

ccgcgccagc tcagggccga cgactgcttt tgtgcatctc gaaagctgga tgcggtggcc 120

atcgaagcca agtttaagca ggacctgggt ttccggatgc tgaactgtgg acgaacagac 180

ctggtgaagc aggcagtgtc tctgctgggg cccgatggga tcaacaccat gagcgaacag 240

ggcatgactc ccctgatgta tgcctgcgtc cgtggggacg aggcgatggt tcagatgctg 300

ctggatgccg gagctgacct gaatgtggag gttgtcagta ctcctcataa atatccatcc 360

gtccaccccg agacccgcca ttggacggct ctgacttttg ctgtgttgca tggacatatt 420

cctgtagttc agctcctcct ggatgctggg gccaaggtgg aaggctcagt ggagcatggc 480

gaggagaact actcggaaac accccctccag ctggcagctg ctgtaggaaa ttttgagctg 540

```
gttagtttgc tgttggagcg tggtgccgat cccctgatag gaaccatgta caggaatgga   600

atttctacaa ccccccaggg tgatatgaac tctttcagcc aggctgcagc ccacggacac   660

aggaatgtgt tccgcaaact gctcgcccag ccagagaagg agaagagtga tatcctgtcc   720

ctggaggaga ttctggccga ggggactgac ctggcggaga cagccccgcc ccccttgtgc   780

gccagccgca acagcaaggc caaactgagg gccctgaggg aggccatgta tcacagcgct   840

gagcatggct acgtggatgt cacaattgat atcaggagca taggcgtccc gtggactctg   900

cacacgtggc tggagtcttt gcggatcgcc ttccagcagc accgcaggcc tctcatccag   960

tgcttgttaa aggagtttaa gaccattcag gaggaggaat acacggagga gctcgttacc  1020

caaggcctgc ccttgatgtt tgagatcctg aaagcgagca gaatgaagt gatcagccag  1080

cagctgtgcg tcatcttcac acactgctac gggccctacc ccatccccaa gctcacagaa  1140

atcaaacgga acagacctc gcgcttggat cctcattttc ttaacaataa agaaatgtct  1200

gatgttacat ttctggtaga aggaagacca ttttatgctc acaaagtgct gttatttaca  1260

gcctctccaa ggttcaaagc actcctctcc agcaagccga caaatgatgg cacctgcata  1320

gagattggtt atgtgaaata ctccatcttt cagctggtta tgcagtatct ctactatggt  1380

ggcccagagt cactgctcat taaaaacaat gagatcatgg agcttctgtc tgctgctaag  1440

tttttccagc tggaggcttt gcagcggcac tgtgagatta tctgtgcgaa aagcatcaat  1500

accgacaact gtgtggatat ttacaaccat gccaagtttc ttggagtcac agagctctca  1560

gcatattgcg aaggctactt tctcaaaaac atgatggtcc tcattgaaaa cgaagcattc  1620

aagcagctcc tgtatgacaa aaatggtgaa gggaccggcc aggatgtgct ccaggactta  1680

cagaggacgt tggccatcag aattcagtcc atccacttgt cgtcttccaa aggttccgtg  1740

gtatgaaacg tctagtgcag ggaatgcttc ccgggaactt tccagttctc ctgccgcatt  1800

ggctttacac aaacacagac aaattccacc tggcacctgt ttttggctgg gccaaggagc  1860

tgcctctact gctcccacgt gttcctgttg aaaaacaaag gactttccac tggtctgcag  1920

atcagatcag ctgggtccag agtttaatgg gcaactggac aaccaagtta accccaattg  1980

aaagcacccc taggaccatt gaacacccac tgccggggac cactgtccag tgaatggatt  2040

gaggcctttt aaaggtcact caggttccag gttgacagtt ggaggacctc accgtaccaa  2100

ccctgaagag attgtattac acattaagga ccttggtagc tgtgcttcag caaacgtcaa  2160

ccatggtagc aaattggtga ggctgtgacc aataatgagg aaataatctg gcaaattttt  2220

aggggtggga actttttaa atgttcattt aaaaaaaaac aaaaacaggg cagtcttgta  2280
```

```
gtttaaaata tatttctaaa agcttaacag ttcgttttca actaaattgt gtttagggat 2340

ctgtgtttga gatttttctt tatttctttt ttttttttaa atagtaagtc acaggtccac 2400

actgtgtaaa catgcatctg ataagatact gctgatattc taaacaagtt gaaataatct 2460

tgccttagtg atcatgatta cacaaaagag gtgcactgcc aataagtatc tctaattcaa 2520

tagttgaaag caacctgcat gctaatcgtg gtttcggggt gagaataaaa cacccccaca 2580

taacatgcat ttgcatgggc ccgaacctgt gaaatgttac gtttgtgctt catttttgcc 2640

aaggtaaaaa tgttccatca tttctagcta aaactccatt tggtgaaacc aacatatcca 2700

tttctttcc tagttacgga tgatttgggg atgcttttgc agaaatgtgt tcatagatga 2760

tgctgaatgg gggaggggggg cagcacgtca gagaatttac tattaatccc agagtttct 2820

ctgtattctc agaagatgtt aatagtttgt tactagccag agagtatgac tatggtagat 2880

tattttaaa gatgaaacat gtatgatagg atggattctt tctgtattct gagagtgtac 2940

agtacaggat tattataatg aaagtttata tcaacagggt ttcgttggct ctgccatata 3000

ttataagcaa aagagattgg taaagtgcca cagtattcca gataacttttt cagttgcggc 3060

ctttcttctc gttctttaat ttgaaaccta gatacatgca gtaaaaacta ggagaatgac 3120

ttttaccctt ggggacagcc aagttttgtt gataaaccta tttcctagca tgccttcagg 3180

aagttgtgcc agaccctaga ttgtgaagga cccactgttc ttctgttgta cgagctccct 3240

gaaccattgt tcagaggacc aatgtcacat cgcttcatgg gcatggccca tggagcatct 3300

gggtgatatc tgtctacagt attggctctt ctgcgaggct gatacacaag gcctctcttc 3360

cacatgatca tttgcaaacc tcccccagcc cctaccatcc aatgtggaag gaaaacaaga 3420

actgcctgaa gaagagtcca agctacagat acacagcgtg tgcattgcgg ctgtcacctt 3480

cctcctccca cttctgtatc ctcagagatg ctgcgtggat gtttccttaa cctcagctga 3540

cttccctgtg aatgtctaat gctagttcag ggcctccagg cattgatttg tacagtggta 3600

actcccaatg aggcttctgt tatcatttgg tgtgctttct ctgtcattaa aagaaatgat 3660

tttccc                                                              3666
```

<210> 414

<211> 5259

<212> DNA

●

<213> Homo sapiens

<400> 414

gtgacaagga tctcattttg cccaacggtg gtactccagc aggtacttca agtccagctt   60

cttcatcttc ccttctcaac agacttcagc ttgatgatga tattgatggt gagactagag   120

atctcttcgt tatagtcgat gatcccaaga agcatgtgtg tacaatggag acttacatca   180

cctataggat caccaccaaa agtactcggg tggagtttga cctcccagaa tattctgttc   240

gtcgaagata ccaggatttt gactggttga ggagcaaact ggaagaatcc cagcccactc   300

atctcattcc ccctcttccc gagaagtttg tggtaaaagg tgttgtggat cgtttttcag   360

●

aagagtttgt ggagaccaga agaaaagctt tggataaatt tctaaaaga attacggacc   420

atcctgtgct gtctttcaat gaacacttta atattttcct tactgctaag gacctgaacg   480

cctacaagaa gcaagggata gcattgctga ccagaatggg cgagtcagtc aagcacgtca   540

ctggcggcta caagctgagg actcggccgc ttgagtttgc tgccataggt gactacttag   600

atacatttgc actcaaactg ggaaccattg atcgaatagc ccagcggatc atcaaagaag   660

aaatagagta ccttgtggag ctgagagaat acgggcctgt gtactccaca tggagcgcct   720

tggagggtga gctggccgaa cccctggagg gtgtgtcagc ttgcattggg aactgctcta   780

cagccttaga agagctggca gatgacatga cagaagactt cctacctgtg ctcagggaat   840

atattttata ctctgactcc atgaagagtg tattgaagaa gagggaccaa gttcaagcag   900

agtatgaagc caaactggaa gctgtggctc tgcggaagga agaccgcccc aaggtaccgg   960

●

cggacgtcga gaaatgtcag gatcggatgg agtgtttcaa tgctgacctg aaagctgaca   1020

tggagaggtg gcagaacaac aagaggcagg acttccggca gctactcatg gggatggctg   1080

acaagaacat ccagtattat gagaagtgcc tcatggcgtg ggagtcgatt attccactac   1140

tgcaggagaa acaagaggcc aagtaaagtt ctttcttggg acggagactc ttctacctac   1200

acagggcctg gcaccctata ccggaatgtc cctgcagtgc cagagacgca gtgctgggaa   1260

aacaaccaca gaaacatctc tcctttgtgt attttccct cccccacctt tcacccaca   1320

gtggttttca attagtattt attccatggt ggagtctgtg aggctagaat atctctcagc   1380

aagagcagca tacctccatg ttatgaaggc atctgttcag tgaagcacta cgaaaatttg   1440

aaaccaaggg acaagacaac ttgcagctga cgctctgaca tttcatgaca gtttcctctt   1500

tagggacagc tgagttgcca gttgtgggag agaacccggg gcctgctttt caaggatgag   1560

gaggaggcag gaacagaagg cagctgctgc tttctgtgga aacctggccc ctctggaatt 1620

ggcctctgtg ggcattgact tgtcttggcc taggaggcat tggtgcctcc ctggcaagtc 1680

cttaacgtac agtacctgta gctgtgagtg tggcctgctg cctgcttgtg atgagtgata 1740

ccgtcttact gtttctgttt cacataggga catttaaatc aatgtcaatg tgcgtccatg 1800

cttgagtgag caagccagcg tccttgtcct cctgcaatgc ctttgggaag ctcaggggaa 1860

tgctccccaa gcttgtttct gacactagaa tgcaacagat tggaaacttt ttgtgtaaaa 1920

tgaaaaaaac aaagtgctgt tttttttttt tttttctgtg aaggtcttca gtgttttgct 1980

tgttcactgt catcagagca gggattagac ctgttaggga atatctattg tcttgaagtc 2040

agagtagctc cccattgttg agattagtgg gcatatacca agctccaccc ccagtgtcag 2100

ctttgtgcaa tttgccttta cctcaccaaa aatacctact ttaatatttc ctcctgtgtc 2160

ctctgaatgt ctgggcgagc ttttggtgag agggctggta tgtcatgttg ttatgataca 2220

gtcgaaattt gtcaatgcag tgtgaatgtt ctacataaag tgctttaacc gttaacattt 2280

cctggtcagg aaggaaaatc agtacctgga cgggcctcga aaatgacaaa tgcaacagcg 2340

agccctttgt gtccagctaa gctaaagtct cctcagtgtg cagccagatt cctggggact 2400

gctgagtgtg gttacaggct gcatttcaga caatgaccag gtttactttt catatcacaa 2460

agcaaacagt caccaaggat ctgtcttcca actctttttt ttttctgctg aaatgaagct 2520

acatgtcatg tttgtgttct ttcatctgtg gctcatccct gtaaaactac gaatctgagc 2580

ctcaaataag cagtagtttt tttgttgttt atttttaatg aaacagctgt gttaaggcgc 2640

tgcttcagat gcaagttcac ctggaaatac tggtcagcgg gcagcacgtc aaggtcactt 2700

aagcccactt ttaactgcag gtcatcctcg catcagccaa ggctgtggtg ctgttgatgc 2760

cgcagttgga cagcatagga cggcttggtt ctgtttcatt gtgtttgaca atgttgcagt 2820

ttaaatgata atgtttaaat caattggtac ttgcctgtag tgttaaaccc tatttgtgcc 2880

attctcaagt cctttgatgt gaattttcag tttggtacag ttagaaatga ctcattgatg 2940

cggacaggta agaacaaccc atgtaccccc gagtgattgc atgctttatt ctacctctaa 3000

gccatcgtgt tggcgtgggt atggacgcct gggtctgacc tgacactgtg ctgggagaat 3060

caggatgtgt gtctaatggc gagctgacag ccctctgctg atatttggca gaaggcacca 3120

gaccagccca gcagcaaatg ctcatctttg ggaacatagg aagctttacc ttggggaagg 3180

tatgctttac aaatgtccag tgtaatgaat gtttggaaaa aactggagtt acaggaaaat 3240

gaaatctgac tatctgctag ttgccaaaac ccagaaacat tcctgtgtaa tggttagttg 3300

ggaaagaagg cagcacttga aaaaatttac caggttcctc actgggagat gtgggaaggg 3360

gcgtgggacg cacgcggtca ctccctctcc tagtgagagg cagatggctg gctctgaagg 3420

gaggcaggca ccgtgggatt tgggcttgct ctgcttggtc cccatgtgat gccctgtgct 3480

gtaagatatc agaaagacct ggaacaaggc aaactttatg tcttcctggc atgttattga 3540

taacagagcc aggaagtcca gtgtacatta cagattttct gggagaaata gtccttccag 3600

agaaaggatt ccttcccagc ctccaggctg gtgtctcatg aggtgaggag gctggcccag 3660

aaggaagggg acgttaggtg gtgaagcagg ctcccctggg cctctgaggg ccagcagtcc 3720

caaccatttg cctcttcgtt ttgaccaagc acaaaagaga tattccctag aagtgtcaca 3780

cggaggcttc tgtgccaaag actgccttgt agaggtctca tcacctcaca cttcttgact 3840

tcacaaaatt gtggccctga gatcagtact cctctcttaa gtatttatta ttattattat 3900

ttactttacc tcaagcagac agacataggt tttgaggctt gaatacatgg cagtggaata 3960

caaggccctc cctagcagcc gccccaggcc tggaaagtgg gagatttcat tcgcccgggt 4020

taaaaatcca gaggaagaca gaagagagga gtcctaggaa ctgagcagat tttagagacg 4080

caaatgatgt ttaagagagc cttgtttcag atagaaattc tctatgggtt gaaatgccaa 4140

aaacagaaaa catgatgttg actcatgtaa tttagtccat tttagcagag cctttagtgt 4200

taacaccagt ggcgaggagc attgcatatt ctctgtcagc agcagcactc ccacaccagg 4260

tggttctggg ctctctgtag gctggtccta gtaggtgaca cccagcaaca cccctgttgg 4320

acaggattga ttgttcgcag tcttagacca acacttcagt cagaaatgtt actgggagga 4380

ggaaaggaaa atcacttttt ttcctccatg tggaaatgag gagagaggaa agtggattgc 4440

aaaccaaaat gtgagtcagt gtgatgaagc agtggctctg tcatctcggc ctttatccaa 4500

taacaaacca gcatctctta aaggcgcttt tggcctagac acccctgaag tttggatgaa 4560

gtctggtgga ttccctgtcc gttgtatttc tgtgtgcctg ttcccttcat tgctgtgagt 4620

tgggagtgca ttgagagatg atgtccatct gatatattcc tgtgaaataa actgccagca 4680

aactttctaa cttgtatttt aactgttaaa gaagagatta aaaacttcgg ctttggacat 4740

gtccacatta tggactgtca tcttattttt aaaagtcatt ctttacgttt aaaatttaa 4800

aataaaaacc ttctgaggta ttgatgtagt ccaccgtgta aatgttacct tctctccatg 4860

ctgccattat gccaaaacaa aagctgtgat aaaaaaagtg cttgagagag tgtgttgata 4920

agaaagtgat ttatttacag atggaagtct ttgtttcatg aagctaccaa actttaaaaa 4980

gaatgtcacc cttttttttg tttgttatgg aaaccagaga ttgtaaaatg gaaaaagaat 5040

cgtttttttt gttgactttt tgatgctggc acgaggtttt tgtccacttt tttcatatat   5100

ctgtgtataa aaaaattgtt gtttactatg gaattagtat tacattttga ggtaaacaaa   5160

agaatttgta ttgcttgata aatattagct tgtaaattta aagtttcttt acttcaatta   5220

acttaaagga ccaataaacc cataaaagat gctttcttt   5259

<210> 415

<211> 3761

<212> DNA

<213> Homo sapiens

<400> 415

ggcgcgcccg cccatccccc gctgcccttt ttctcctggc cgggtgcgag ggagcatgcc   60

cgcgcctggc ctcggccagc gaagagttaa cctgaggggc gagccgctgc ccccacctcg   120

ggggcgtgcc cccctccccc gctaggcggc ccgccccccg cgccagggta tggcccctgg   180

ccccggcccg ggacccgagg tcccgcgccc gggtcagtga aaggcgtctt cccgttcccg   240

ccctccgcct cctctcgccg gccagcaaca tgggatgtaa tatgtgcgtg gtccagaaac   300

cggaggagca gtacaaagtg atgctgcagg tgaacgggaa ggagctctcc aagctgtctc   360

aggagcaaac tctgcaggcc ctgcgctcct ccaaggagcc cctggtgatc caggtgctga   420

gacgcagccc ccgcctccgg ggggacagct cctgtcacga cctgcagctg gtggacagtg   480

gcactcagac cgacatcacc ttcgagcata tcatggcgct gggcaagctg cgtccgccca   540

ccccgcccat ggtcatcctg gagccccccc caatcagcca tgagtattat gacccggcgg   600

agtttatgga gggcggcccg caggaggcag accgcttgga tgagctggag tatgaggagg   660

tggagctgta taaaagcagc caccgggaca agctgggcct gatggtttgc taccgcacgg   720

acgacgagga ggacctgggc atttatgtcg gagaggtaaa tcccaacagc attgcagcca   780

aagacggccg gatccgtgag ggagaccgca tcatccagat taacggtgta gacgtccaga   840

accgggaaga ggcggtggcc atcctgagcc aggaagagaa caccaacatc tccctgctgg   900

tggcccgacc tgagagtcag ctggcgaaaa ggtggaagga cagcgaccgg gatgacttcc   960

tggatgactt tggctctgag aatgagggg agctgcgtgc tcgtaaactg aaatcacccc   1020

●

```
ctgcccagca gcccggaaac gaagaggaga aggggggctcc cgatgccggc ccaggcctga  1080

gcaacagcca ggagctggac agcggggtgg gccggactga cgagagcacc cggaacgaag  1140

agagctctga gcacgacctg ctgggggacg aaccccccgag ctccaccaac accccgggaa  1200

gcctgcgcaa gtttggcctg caaggggacg ccctgcagag ccgggacttc catttcagca  1260

tggactctct gctggccgag ggggcggggc tgggaggggg cgacgtcccg ggcctcacgg  1320

atgaggagta tgagcgctac cgtgagctcc tggagatcaa gtgccacctg gagaacggca  1380

accagctggg cctcctcttt ccccgggcct ccggaggcaa cagcgccctg gacgtcaacc  1440

gcaacgagag cctgggccac gagatggcca tgctggagga ggagctaagg cacctggaat  1500

tcaagtgccg caacatactg cgggcgcaga agatgcagca gctgcgtgag cgctgcatga  1560

aggcctggct gctggaggag gagagcctct acgacctggc ggccagcgag cccaagaagc  1620

acgagctgtc cgacatctcc gagctgcccg agaagtcgga caaggacagc accagcgcct  1680

acaacactgg ggagagctgc cgcagcaccc cgctgcttgt ggagcccctg cccgagagcc  1740

ccctgcggcg ggccatggcc ggcaactcca acttgaaccg gaccccctccc ggccccgctg  1800

ttgccacccc cgccaaggca gctcctccac cggggagccc cgccaagttc cggtccctct  1860

cccgggatcc tgaggccggc cggaggcagc acgcggagga gcgcggccgc cgcaacccca  1920

agacgggggtt gaccctggag cgtgtgggcc ctgaaagcag cccttacctc tcgcggcgcc  1980

accgcggcca gggccaggag ggcgagcact accacagctg cgtgcagctg gccccgacgc  2040

gaggcctgga ggagctgggc cacggccccc tgagcttggc cggtggccct cgggtgggcg  2100

gggtggcggc cgcggccact gaagcaccgc gcatggagtg gaaagtgaag gtgcgcagcg  2160

acggaacccg ctacgtggcc aagcggcccg tgcgagatcg gctgctgaaa gcccgtgccc  2220

tgaagatccg ggaggagcgc agcggtatga cgaccgacga cgacgcggtg agcgagatga  2280

agatgggccg ctactggagc aaggaggagc ggaagcagca cctgatccgg gcccgtgagc  2340

agcggaagcg gcgcgagttc atgatgcaga gccggctgga gtgcctgcgg gagcagcaga  2400

atggcgacag caagcccgag ctcaacatca ttgccctgag ccaccgcaaa accatgaaga  2460

agcggaacaa gaagatcctg gacaactgga tcaccatcca ggagatgctg gcccacggcg  2520

cgcgctccgc cgatggcaag cgggtctaca accctcttct ctcagtcacc accgtgtgag  2580

ctgcccgggc gggtacacgg cccaggccca gggaacccccc tggggcccccg gccctcactc  2640

tcctatagag attgtgtgtg tgtgtgtgtg cgcgcgcgcg tgctcgctgt gcgcacgcac  2700

acatctcgtc tgggtgtgcg cacagggctt tgttagcaga gagaagcccc tgaggagaag  2760
```

ggacgctttt cttccttctg cccaagtaaa gtgaccatgc cagtggccag cactgggggc 2820

acacctgtga tgggcacccc ttcagctgtg cgtgtgcatt ccccatcccc catgctcttg 2880

cgtgtgcttg cacgtgcacg cacacacaca cccagtgctc tctccacccg acccgtgtac 2940

ttgcagacag ggaagctgag ctgaaaggag cacaagagag tgtccggctt cgctgctgag 3000

cgcggcctct ccccgccgct gcgcactgca gttatttgta dacaaaggca ccctgattt 3060

ttgtggtttt tctcccttc tgtgcttgcc aatagttgtt ttgttttgtg gacctgccct 3120

gggggctggc agctccttca ggcagcctgg cagaagtgga actcccctct ccactgatgg 3180

ctgggaaggg agttggggag gaagagtggg agggagggct ggggatggat gggagggaag 3240

gggagggaaa ggtgggagga atgggaagca gctgttctgg tggcttccac tctgaggtgt 3300

gggaacgggg agcctctggg gggcacctgt ttccccagtg actcagagag agcaagactg 3360

caggaacgga ggggtcctgc agggtgtcca ccaagaagtc acagagcccg ttctgcgccc 3420

cacaccatct ggagcagggg cttctcttct gagtgaactg aggaaggtgc ttagatggtg 3480

agggctctag aaaccaagcc ccatgagcag cagtggaaga cctcgggcca tgcggcctgg 3540

ggaggacttg gtggcgatcc gcaacctgga ccccagtgag aggcggtggg ctgactggga 3600

aggagaggcc cccaacctcc tcaggatttg cacgtgtgaa ctaggctgcc tgtggggtgc 3660

cccttaggct tggagagccc cagattggag gcagacagac tgcaccaccc cttccccccc 3720

tgcatctcaa gaataaagca agctgccttt gtacttggtt g 3761

<210> 416

<211> 5394

<212> DNA

<213> Homo sapiens

<400> 416

agttggaatg cattttaaga atttcaaggc tgttttttgag ctttgttatt tttaacacat 60

taccatatgg ttgtgataat tcaacttttt attttaaaat ctggcaagag acatcatctt 120

ttaaaaaata atggcctttg ctgtttctgc cagcttaatc ttccagatga gttttcatta 180

tcgatatttt caagctatat caggcaccta agtggtcata tacatgttgt tttgttttgt 240

tttgttttga gacagggtct ccctctgttg cccaggctgg agtgcagtgg catgatcata   300

ggtcactgca gccttgaact cctgggctca agtgattctc ctgccttagc ctcccaagta   360

gctaggagta caggtacaca cccccacatc tggctaattt ttttattttt tgtagagatg   420

ggcctttgcc gtgttgccca ggctggtctc aaactcctgg cctcatgcaa tcctccaata   480

taagttaaaa atagaaacat agtttatggc tttactttat catatcagcc tttttggttt   540

ttagaatttc tgatttaggg gagaaactca tatcctaagt taaattaata ccaatggatt   600

taatgaattt taatgctgtt caatatgtag tctttttttt tttaatcatt gaggaatgtg   660

attgattctt ggtagattta tcttatatct acaacttgaa ttcactgcct tctagtaatt   720

tttgggttac tatttttaca gtcactatta tattttttc ctttccatat atttatatac   780

cattttctt cttgaaaaac tactctggca aattagaatg atgaaaatgg tcatctttga   840

tttttttttt cctatgttat ttaagggagt gactatatta tagactggct tttgatatat   900

aatatatgct taaaacccag gggtcagttt caatacatat attcctttca ttagccattt   960

ttttcctcca ttcactctat gtatgtgagt gggatggggg cattatttta ttatttgagg   1020

ttaagagcag aggtttaata ggcaaaagaa acagaaagga gaatagctct ctctcctgtg   1080

agggagaggg gtgcctgagt gggacttccc actttactt ttaaaatctc ttttgatgca   1140

acttactcat ggtatctgta cagtaagtgt ttatgttttc acatatttga aaatctgtga   1200

gatttcccaa gattggcaag cacaatgtag tatgttcttc agcctcattc agcaaaatag   1260

gagtcttcaa aagacagtcc tggccgagtg tggtggctca cgcctgtagt cccagcactt   1320

tgggaggccg aggtggttgg atcgcctgag ttcaggagtt cgagaccggc ttgaccaaca   1380

cagtgaaacc ctgtctctac taaaaataca aaaaattagc caggcatggt ggtgggcgcc   1440

tgtagtccca gctactcggg aggctgaggc aggagaatgg cgtgaactca ggaggcgaag   1500

cttgcagtga tcgagatag tgccactgca ctccagcctg ggtgacagag tgagactcca   1560

tctcaaaaaa aaaaaaaaa aaaagattgc ttctggtgac ggaaaaatga atattgtgtg   1620

ttttctgctc tcaaataaat catagtattc agactgtcat ttgatgtctt tatcaatgtt   1680

atcagaggaa aggggaaact ttgaggggaa gtgtttgggg gaaactattg gagttacttt   1740

tcagatgatt ctggatcttt cttaatttta tggactattg gaattccaga attaaaagct   1800

accttgggat gatccagtat aaccttgcac ctgatagtag tgttttctta taccatttct   1860

gccacgtggt tacccagtag ctacttgtac atgcttagta atatgccagc catttccatt   1920

acaggtttag taccccttat ccgaaatgct tgggaccaga agtatttaa attttggatt   1980

tgtaaagatt ctggaatatt tgcatagaca taatgagata tctcagggat gggacccagg 2040

tctaaatata aaatttattt atgttcttcc ttgttggtat agtggttagt tttttttttt 2100

taaggtattt tatttatgtc ccatatacac ctatagcctg aaggtaactt tataaaatat 2160

tttaaataat tttgtgcatg aaacaaagtt taccttaagt gcttatgtgt ggaattttcc 2220

acttgtgtca taatgtgggc tctcaaaaag tttcagattt tggagcattt tggatttcaa 2280

attttcagat cagaaatgct caacctgtat tagacactgg aagccttaga aaattctcct 2340

tactgtaagc cccagtttac tacctaataa ctaccaccta gttatatctt ctgtgcaaca 2400

aatatggtca ctgcacatgg gtgcccacct gaggagggca ggggctgaaa cccagcttca 2460

ttctgcatgt caaaccatgc acctgcagga ctgtagaaac ggctggtgcc gttttctaat 2520

tggcacagag ctgctgtatg gactagctgg aggtctaaca gcaaaggaag tattgatata 2580

ttcccttcca aatcacaggc tttacacaat acaactagga gaagaaagcc aaactaaaat 2640

tcaaatgtac taaatttttt tcctatctct gggtgacttt gggcaaatca ttgaatcttt 2700

caacctcaga tttattataa gtaaaataaa gtaacacctc tcttaaccta ccttaatggg 2760

tccaaaagct catgttgaca aaacggttct ctgactcact gtagggtcag aattactggc 2820

tgtgactgca cataggagaa tcatttctaa tttttataac attttgcttc acagggaggc 2880

tgagaagaca aaactcctta tagctgcaca gaaacaaaag gttgtggaaa aagaagctga 2940

gacagagagg aaaaaggcag ttatagaagc agagaagatt gcacaagtgg caaaaattcg 3000

gtttcagcag aaagtgatgg aaaaagaaac tgaaaagcgc atttctgaaa tcgaagatgc 3060

tgcattcctg gcccgagaga aagcgaaagc agatgctgaa tattatgctg cacacaaata 3120

tgccacctca aacaagcaca agttgacccc ggaatatctg gagctcaaaa agtaccaggc 3180

cattgcttct aacagtaaga tctattttgg cagcaacatc cctaacatgt tcgtggactc 3240

ctcatgtgct ttgaaatatt cagatattag gactggaaga gaaagctcac tcccctctaa 3300

ggaggctctt gaaccctctg gagagaacgt catccaaaac aaagagagca caggttgatg 3360

caagaggtgg aaatgttctc catatcaaga tgtggcccaa ggggttaagt gggaacaatc 3420

attatacgga ctcttcagat ttacagagaa cttacacttc atctgttcca cctctcctgc 3480

gatagtcctg ggtgctccac tgattggagg atagagccag ctgtctgaca cacaaatggt 3540

cttttcagcc acagtcttat caagtatcct atatgtattc ctttctaaac tgctactcat 3600

gaatgaggaa agtctgatgc taagatactg cctgcactgg aatgttaaac actaaatata 3660

taacaagctg tgttttccta agctgagatc tgttgaataa tgtttacatt cgtcccccgg 3720

```
ggaaatgtat gctcagccac cattcaagag atgactgaga aggagatggt aagttcaaga   3780

agactgattg cacctgggac ccaggccctt tctttgggat ccagtcccag ccttcatcca   3840

tgtgattaag atccaggccg ctgaagttcc ccaggaaatg atcttccact tgagcaacct   3900

tttacttgat acgatttgca cctttctgtt ttcctgcagt cagggtggtg gcctgcaggg   3960

acctgagctt tgctccccaa ccagattcct catagagatt cctaatcact agtttcttgt   4020

attcataaac tcagagatac agagggcttg gtttgaagtt ggggtgagat gaaacctttg   4080

ctctgagcca aagctctggg gccttgcatt ccctgcattg ggttgatgac tgtcagcatc   4140

actgccgcag gccatgcttg actaaggtac ctggttttag ccacagccac ctccttgtat   4200

gttacctttc agctctggcc aagagtggga cagggtttta accacaaata ggagcagcat   4260

gcaattccta gtgacttgct gcacagtatt gtatcataat tacaggaagt ttttattttt   4320

aaaactggat ctggggtata ttcatttgcc ccatcacctc tgtctaaagg cccaagtcct   4380

agggctgcca tggtcacaag cacactgatg ctccttaaga ttgtttatct ggagcccaca   4440

tagtgtggaa caaaaagtca cctagaaagc atccttggtc atcattgtct ccttcccacc   4500

tggcccagag atgcttaaat ccaagttgtt tctccagctg tcacctcccc caggagatca   4560

ggattccact gacgtcctgg gcagccagtg aatttaattt tccatgagaa acaacagagt   4620

taacctgtgg cattaggaga cctacttcat gtggaccctt tttttccttc agtttaactt   4680

ttctggagca gtgtgctgcg tagttcggcc tgagtttgtg cagcttgtta aggcaactct   4740

tgtgtacgct atgttgaagc tcaacaaaaa agtcatggga ccacttctag aaatctttca   4800

gctgtcaggc ctgtcagtct catgacagtt tgttggttgt gccaaacact ttatttggga   4860

aaggaaagcc cagatttgaa tgggtctttc ccctgggcct tatcctatag aggcatttgt   4920

aatatggaga aaataatttt tcatttttgc tcatttaatt ctataaattc tctttataaa   4980

tgaattttgt gttctttagt tctccttaaa agaacttttg aattataaaa ataaaatctt   5040

tacctgtcga attgttgctg cagatgattg ttgtggaaaa tctggatcat tgacctctgt   5100

gctttcattc ctagagatgt tttatagtta catgagcaaa agctgttgcc ccaaagtgat   5160

ggccctggag gcggggctga ggaacaggga aatgccgctg tgaagtctta aagcacttct   5220

gcttaaactc ccatgtgtga ggagtgtgcc tccctgtgcc ctctcagctc tgaggctggc   5280

cgtctttcgg ggtgttcctt ttggcaaata tacactgtaa tcttgagtct aaatttatat   5340

gttgaaatgc tacctttttt aaaataagaa actaaataaa attattttac tatc          5394
```

<210> 417

<211> 3604

<212> DNA

<213> Homo sapiens

<400> 417

agtgtgggca	ccagtgtggc	ccagcctccc	actccaaggc	tccagcctgc	ctctatccca	60
gacttccagg	cccatgagct	ggctctgcca	ccatcatcct	gcctcccgcc	agctcccgct	120
ccttaggtcc	acactcactg	gtaataatgc	tcaaaagtgg	tggccatctc	caagccggag	180
aaaatcagga	cagcttgcag	gcattgctgc	agctgtgcca	gcctctccat	ttcctgggct	240
ccaccgatcc	ggctgccctg	gatctgctgg	tcaatgtgcc	gggcgaactg	ctcactcacc	300
tgagcaatgg	cagagcacag	gaaagccatg	aatgagcgag	cagagcaggc	ctgctcctgc	360
ccacctgctt	ctccaccacg	gcccgccaac	agcgcgtcag	gtttctcatg	atgctgcttg	420
gaaggccccg	ggtagccaag	gagctccagt	cgtggcttct	gtttctgcct	tctgtagaga	480
ccaagaaagt	ggcagaggca	aggagggtgc	agcccctcca	ctcccaagtc	cccatccaag	540
ggggttccct	gaggcctttc	ctgacatgct	gccacccaaa	atgatgttca	tggatggagg	600
tgacacaaac	ctggaagatg	aacaggctga	gcccataggg	aggggaagga	tggggatgga	660
cagaagcctg	tggtgtacac	atggggccca	ggaaaacgct	cctgactaga	gctccccacc	720
tgaatctcca	ctactcactg	ggccgaggag	tggccaccac	aggagggggt	gcctcacggg	780
gctcgacatg	caccagcagg	cactcgaaac	gttattactg	aaacctgcac	aaccggtgat	840
ctgcaaagca	ctttcacctt	aagtatctcg	tctgaagaat	ttcgccctat	gagaaagcaa	900
cacttgtaga	ggaaaaagct	gaggctaagt	gtgccttatc	caaggtcacg	gacctgcatg	960
actcctgacc	agactcgcaa	ctcccgcctc	gcatgcccgc	agaccccatc	tccggcagcc	1020
cgaatggaag	cagccttctt	cccggccaag	ctgctcggtg	ctcctagatg	acgttgactg	1080
tccggcgccg	tcgctctgca	ataacgtaaa	aggaggcggg	cagaaaactg	gagcccaagc	1140
tggatacaca	cctcctttcc	tacctgaacg	ccgtgagagc	caatccgcgg	gcagctctaa	1200
tgtcgcgtga	ctaggaaaca	ggccccgccc	ccccagaccc	gtcaaaacaa	ttgcctcgag	1260
cggcagccat	catggattta	aaggggtagt	accggcaaga	gcggcagcca	caccggcaga	1320

ttgcagaccg ggcaaggtcc cccaggccag gatgtcaggc ctggtgttgg ggcagcggga 1380

tgagcctgca ggccaccggc tcagccaaga ggagatcctg gggagcacac ggctggtcag 1440

ccaagggcta gaggccctac gcagtgaaca ccaggccgtg ctgcaaagcc tgtcccagac 1500

cattgagtgt ctgcagcagg gaggccatga ggaagggctg gtgcatgaga aggcccggca 1560

gcttcgccgt tctatggaaa acattgagct cgggctgagt gaggcccaga atctggagct 1620

cagggggatgt gcccacctag gtgatgctgg ctctagccag ccacctgagc acagtggagt 1680

cggagaaaca gaagctgcgg gctcaggtgc ggcggctatg ccaggagaac cagtggctgc 1740

gggatgagct ggctggcacc cagcagcggc tacagcgcag tgaacaggct gtggctcagc 1800

tggaggagga aaagaagcac ctggagttcc tggggcagct gcggcagtat gatgaggatg 1860

gacatacctc ggaggagaaa gaaggcgatg ccaccaagga ttccctggat gacctctttc 1920

ctaatgagga ggaagaggac cccagcaatg gcttgtcccg tggtcaaggt gctacagcag 1980

ctcagcaggg tggatatgag atcccagcaa ggttgcggac gttgcacaac ctggtgatcc 2040

agtacgcagc ccaaggtcgc tatgaggtgg ccgtgccact ctgtaagcag gcactagagg 2100

acctggagcg cacatcaggc cgtggccacc ctgatgtcgc caccatgctc aacatccttg 2160

ctttggtgta tcgtgaccag aataagtata aggaagctgc ccacctgctg aatgatgccc 2220

ttagcatccg ggagagcacc ttgggacctg accatcctgc tgtggctgcc acactcaaca 2280

atttggctgt gctctatggc aaaaggggca agtacaagga ggcagagcct ctgtgccagc 2340

gggcactgga gattcgagaa aaggtcctgg gcacgaatca tccagatgtg gcaaaacagc 2400

tgaacaacct ggccctcttg tgccaaaacc agggcaagta tgaggccgtg gaacgctact 2460

ggaccaagaa caacctggct tcctgttacc tgaaacaggg caaatatgct gaggctgaga 2580

cactatacaa agagatcctg acccgtgccc atgtacagga gtttgggtct gtggatgagc 2640

cggcaccatg agggtgggac accctatgct gagtatggag gctggtacaa ggcctgcaaa 2700

gtgagcagcc ccacagtgaa cactactctg agaaacctgg gagctctgta taggcgccag 2760

ggaaagctgg aggctgctga gaccctagag gaatgtgccc tgcggtcccg gagacagggc 2820

actgaccctta tcagccagac gaaggtggca gagctgcttg gggagagtga tggtagaagg 2880

acctcccagg agggccctgg agacagtgtg aaattcgagg gaggtgaaga tgcttctgtg 2940

gctgtggagt ggtccggggga tggcagtggg accctgcaga ggagtggctc tcttggcaag 3000

atccgggatg tgctccgcag aagcagtgaa ctcttggtga ggaagctcca ggggactgag 3060

cctcggcccct ccagcagcaa catgaagcga gcagcctcct tgaactatct gaaccaacct 3120

agtgcagcac ccctccaggt ctcccggggc ctcagtgcca gcaccatgga cctctcttca 3180

agcagctgac attcaacccg gcccccaggt ctgctgggtc cccccacccc cacagccctc 3240

acagcattcc ccattgctcc tggctcttcc ccaccccta g gtgggacagt gaaggggagc 3300

agtttaacca gaagattgct gctgcccctta gggtctcagc tccctcctca ggaatccctc 3360

ttaggaagga ccctcaggac accctctctg cacctgtga tcctctagag tagctagctc 3420

tgaggcccca aggtgggtac aaagcaggta tggccctcag agatgcagcc tgctgctggc 3480

ttttcagtca gaggggttgg ggctggccag ccaagctgcc ttgccctggc cgctcttact 3540

ccctccctct gctgtctcac ttcaggtcca tgtatttcac ttttcttaaa taaaagaatc 3600

aggt 3604

<210> 418

<211> 4514

<212> DNA

<213> Homo sapiens

<400> 418

atgggtaagg cgagcgggcc gaaaccgaac gctcggcccct cagtcccggg ctgagggccg 60

cggccaggcg gggtggactg ggagctgggg gagacgccga ggccgccagt cggaactggg 120

gcccgaaccc aggatgggcg gggactgcct gggactcggg ggctcccggg gtcgtcatgg 180

caacgcgccc cctcccttgt tccggcccgt tcccgcccgg gttctgaggc atagtggccg 240

agggctcgag gtgccacggc gtccaggagc gaggacaggg ccaggcaggg tgtcactccc 300

gggtcgggga gcaggcgggg aggggcgatg acttttcagg tttgggggtg gcggagggaa 360

gacgcatctc aggtttggc ctgggtgcct gacgccgagg gcgggagacg gggaatgctg 420

acgcgcagga gcctggctac aaaagacccc acagctgtag agagagcaaa cttgttaaac 480

atggctaaac tgagtatcaa aggactcatt gaatctgctc tgagctttgg ccgcactttg 540

gattctgact atccccccctt gcagcaattc tttgttgtta tggaacattg cctgaaacac 600

ggtcttaaag taagaaaatc attttgagt tacaacaaaa ccatctgggg cccttttggaa 660

●

```
ctggtggaga agctgtaccc cgaagcagag gaaataggag ctagtgtccg ggatctacct   720

ggtctgaaga cccctctggg tcgagcaaga gcgtggcttc gattagccct catgcaaaaa   780

aaaatggccg attacttacg ttgcttaatt attcagaggg atctcttgag tgagtttat   840

gagtatcacg cactaatgat ggaagaagaa ggagcagtaa ttgttgggct gctggttggc   900

ctgaatgtga tcgatgctaa tctgtgtgtg aagggagagg atttagactc acaagttgga   960

gtgattgatt tttctatgta tttaaagaat gaagaagata ttggaaataa agaaaggaat   1020

gttcaaattg ctgccatatt agaccaaaag aattatgttg aagaattaaa tagacaactg   1080

aacagcacag tcagcagcct ccattcaaga gttgattcat tagaaaagtc aaatactaag   1140

ctgattgaag agttagcaat agcaaagaat aacatcatta aactccagga agaaaatcat   1200

caattacgaa gtgaaaataa attgatttta atgaaaacac agcagcacct agaggttacc   1260

aaagtagatg tggaaactga gcttcaaaca tataagcatt ctcgtcaggg gctagatgaa   1320

atgtacaatg aagccagaag gcagcttcga gatgaatctc agttacgaca ggatgtagag   1380

aatgagctag cagtacaagt tagtatgaag catgagattg aacttgccat gaagttgctg   1440

gagaaagata tccatgagaa acaagatact ctgataggcc ttcgacaaca actagaggaa   1500

gttaaagcaa ttaacataga gatgtatcaa aagttgcagg gttctgaaga tggcttgaaa   1560

gaaaaaaatg aaataattgc ccgactagaa gaaaaaacca ataaaattac tgcagccatg   1620

aggcagctgg aacaaagatt gcagcaagca gagaaggcgc aaatggaagc tgaagatgag   1680

gatgagaaat atctacaaga atgtctcagt aaatctgata gtctgcagaa acaaatctcc   1740

caaaaggaga aacagctggt gcaactggaa actgacttga agattgagaa ggaatggagg   1800

cagactttgc aggaagatct tcaaaaggag aaagatgcct tatctcatct tagaaatgag   1860

actcaacaaa tcattagtct taaaaaagag ttccttaacc tccaggatga aaatcagcag   1920

ttgaaaaaaa tatatcatga acaagagcaa gctcttcaag aactcggcaa caagcttagc   1980

gaatcaaaac ttaaaattga agacataaaa gaagccaaca aagcattgca gggactggtt   2040

tggctgaaag acaaagaagc aacacattgt aaactttgtg aaaaggaatt ctcactctct   2100

aagagaaagc accactgtag aaattgtggg gaaattttct gtaatgcctg ctctgacaac   2160

gaactacctt tgccttcttc accaaaacca gtacgggttt gtgattcctg tcatgcattg   2220

ctcattcaga gatgctcatc taacttgccc tgagactcca gaactaaatc cttatgtatg   2280

aaattaccta caatgaatgt tatgatgttg tatacaaagg taaccagaca gctctcctta   2340

agcggctttc ggtcagtatt tggtaccagt ttatcttcta catattcagc tcatggaaat   2400
```

```
tacaagttat atatttcctt ccccattgtt tttcaaaatg tattttcaac agagcatgct   2460

taaaaatcat gtaactcatt aaaaggccag agagcagagc taacacaact tgccttatct   2520

tgtaaaggcc ttaaaaataa ggcttcagat tgttttttc ttctgaattc tgtcaatttg   2580

gtatttgatg gtgcctgcag ttctcttaat gcactttaaa gcttcacagt tctgaaactg   2640

gaaacgcata aaactttaa aattattaat attctaattc aacagatttt cattatcttt   2700

gtaagatttc aactatattt atttgccctt tcttctcccc ctctcccttt gcctcttgca   2760

ttagacaggg ccaatatttt gtcctacaaa atttcctctt ggtctcttta aaaatcagtt   2820

attgtcgtgc ttgctgaaga ttttcagcta cagtggatta aattaaaggg ggcattattt   2880

ggcctcggcc tctacttttt tccttttaat cttgaaagga agttacatat aaccatcttt   2940

cttttcctga tttataaatc ttcccatatg ctgtttcact aaattgctgt tttttaagg   3000

ggtgactcag accccaattc aaagatgaaa acacaaatcc ttccccagaa aaaaaagtat   3060

gtaatagtag gggatgttac aggctcctta taaaggtcct ctcctctaag cattaaaagt   3120

gagaaaaaaa tcaggacttt gctttggtaa tgtattagag ttcagttcaa aaaattttgt   3180

attaacattt tcattggagt aaattttagg aagtatcaca ttgtagtggc ctacctgtat   3240

acatccacag taaaatttca ccatgtccat tgagcacctc tatgccaagg gtgttgagat   3300

gatgaaatat acacttgacc tatttctttt tttttttcgag atggagtttc actcttgttg   3360

cctaggctgg agtgcaatgg cacgatctcc acctcctggg ttcaagcaat tctcctgcct   3420

cagcctccca agtagctggg attacaggcg tgagccacag cacctggcca gtacacttga   3480

cctatttcaa gctgactcaa tgaacactaa tccaagttat attgcttatg gcatactaag   3540

aatttaactt gtataaatta cctctgaata gttacataaa cactatcacc attcagtatc   3600

ctatttttta cattaatttt taaccatgca ctttaagttt gtgagcctat aaaatacata   3660

gaaaatttat ggattaagag cattatattt agtggttaat cctaggtacc tccctgccta   3720

caaaggagtt cttattaata ctgcaggatc ttttcttcat gaatatatgc ttccatgaaa   3780

tttaaatttt tctgaatagc ctaagtatga aatgaatatt ttacttgaag atctattttt   3840

tccaaaaccc gtaaatttcc agtcagcttt tgaggtgtca gatgtgacac agatttctag   3900

atggtctttc ttgaatactg acagaaatgt cctcaagaga ggattatatt cttgaaccat   3960

tttgtattga taggtgggat gggctaacat ttttatgatt actgaataaa caaaaaatga   4020

aattttcaaa tatgctttt tattactgtg cttagaacaa attttaaaat gtgacttaag   4080

ttgcttaaat tccaaggcta atttcattca acaaaccatg attttgtcat cctttaagta   4140
```

agtttctcac ttttcaaaac tcatgtatca acactgactt acttgctttt tttttttttt   4200

tttttttttt tttaaggcag ctttatgac agcaacttgc tccatgtagt tttggcttat   4260

ttaaaaacta tactaacttt ggatttttct gttacaagac ttttaacaat ctgtatttcg   4320

tgattgtgaa ctcgtattca ttttactttt caaaaacaga cttaacatac cattccctca   4380

cctagcagta ctaccacaat aatgctatca tggtgccagg gaattacaat tgtaattctt   4440

ctaacctata atgtttaaaa aataaaatgt gaattttatg aactaaataa atatttggaa   4500

aattagcgtg cttt   4514

<210> 419

<211> 4479

<212> DNA

<213> Homo sapiens

<400> 419

atttcatagg ctgtttggga tgccagagga agagaaactc gtcaactatt actcttgcag   60

ctattggaag gggaaggtcc cccgtcaggg ttggatgtac ctcagcatta accacctttg   120

cttttattct tttcttatgg gaagggaagc gaaactggtc atccggtggg tagacatcac   180

tcagctcgag aagaatgcca ccctgcttct gcctgatgtg atcaaagtga gcacacggtc   240

cagtgagcat ttcttctctg tattcctcaa catcaacgag accttcaagt taatggagca   300

gcttgccaac atagccatga ggcaactctt agacaatgag ggatttgaac aagatcgatc   360

cctgcccaaa ctcaaaagga aatctcctaa aaaagtgtct gctctaaaac gtgatcttga   420

tgccagggca aagagtgaga gataccgtgc acttttccgg ctgcccaaag atgaaaaatt   480

agatggccac acagactgca ctctctggac tccatttaac aaaatgcaca ttttggggca   540

gatgtttgtg tccacaaatt acatctgttt taccagcaag gaggagaact tatgtagcct   600

cattatcccg ctccgtgagg tgacaattgt ggaaaaggca gacagctcca gtgtgctccc   660

cagtccctta tccatcagca cccgaaacag gatgaccttc ctatttgcca acttgaaaga   720

tagagacttt ctagtgcaga ggatctcaga tttcctgcaa cagactactt ccaaaatata   780

ttctgacaag gagtttgcag gaagttacaa cagttcagat gatgaggtgt actctcgacc   840

```
cagcagcctc gtctcctcca gcccccagag aagcacgagc tctgatgctg atggagagcg    900

ccagtttaac ctaaatggca acagcgtccc cacagccaca cagaccctga tgaccatgta    960

tcggcggcgg tctcccgagg agttcaaccc gaaattggcc aaagagtttc tgaaagagca   1020

agcctggaag attcactttg ctgagtatgg gcaagggatc tgcatgtacc gcacagagaa   1080

aacgcgggag ctggtgttga agggcatccc ggagagcatg cgtggggagc tctggctgct   1140

gctgtcaggt gccatcaatg agaaggccac acatcctggg tactatgaag acctagtgga   1200

gaagtccatg gggaagtata atctcgccac ggaggagatt gagagggatt tacaccgctc   1260

ccttccagaa cacccagctt ttcagaatga aatggggcatt gctgcactaa ggagagtctt   1320

aacagcttat gcttttcgaa atcccaacat agggtattgc caggccatga atattgtcac   1380

ttcagtgctg ctgctttatg ccaaagagga ggaagctttc tggctgcttg tggctttgtg   1440

tgagcgcatg ctcccagatt actacaacac cagagttgtg ggtgcactgg tggaccaagg   1500

tgtctttgag gagctagcac gagactacgt cccacagctg tacgactgca tgcaagacct   1560

gggcgtgatt tccaccatct ccctgtcttg gttcctcaca ctatttctca gtgtgatgcc   1620

ttttgagagt gcagttgtgg ttgttgactg tttcttctat gaaggaatta aagtgatatt   1680

ccagttggcc ctagctgtgc tggatgcaaa tgtggacaaa ctgttgaact gcaaggatga   1740

tggggaggcc atgaccgttt tgggaaggta tttagacagt gtgaccaata aagacagcac   1800

actgcctccc attcctcacc tccactcctt gctcagcgat gatgtggaac cttaccctga   1860

ggtagacatc tttagactca tcagaacttc ctacgagaaa ttcggaacta ccgggcaga   1920

tttgattgaa cagatgagat tcaaacagag actgaaagtg atccagacgc tggaggatac   1980

tacgaaacgc aacgtggtac gaaccattgt gacagaaact tcctttacca ttgatgagct   2040

ggaagaactt tatgctcttt tcaaggcaga acatctcacc agctgctact ggggcgggag   2100

cagcaacgcg ctggaccggc atgaccccag cctgccctac ctggaacagt atcgcattga   2160

cttcgagcag ttcaagggaa tgtttgctct tctctttcct tgggcatgtg gaactcactc   2220

tgacgttctg gcctcccgct tgttccagtt attagatgaa aatggagact ctttgattaa   2280

cttccgggag tttgtctctg ggctaagtgc tgcatgccat ggggacctca cagagaagct   2340

caaactcctg tacaaaatgc acgtcttgcc tgagccatcc tctgatcaag atgaaccaga   2400

ttctgctttt gaagcaactc agtacttctt tgaagatatt accccagaat gtacacatgt   2460

tgttggattg gatagcagaa gcaaacaggg tgcagatgat ggctttgtta cggtgagcct   2520

aaagccagac aaagggaaga gagcaaattc ccaagaaaat cgtaattatt tgagactgtg   2580
```

```
gactccagaa aataaatcta agtcaaagaa tgcaaaggat ttacccaaat taaatcaggg 2640

gcagttcatt gaactgtgta agacaatgta taacatgttc agcgaagacc ccaatgagca 2700

ggagctgtac catgccacgg cagcagtgac cagcctcctg ctggagattg gggaggtcgg 2760

caagttgttc gtggcccagc ctgcaaagga ggacaagctg cactgcgagg acatcggaga 2820

ggacacggtc ctggtgcgga gcggccaggg cacggcggca ctgccccgga gcaccggcct 2880

ggaccgggac tgggccatca ccttcgagca gttcctggcc tccctcttaa ctgagcctgc 2940

cctggtcaag tactttgaca agcccgtgtg catgatggcc aggattacca gtgcaaaaaa 3000

catccggatg atgggcaagc ccctcacctc ggccagtgac tatgaaatct cggccatgtc 3060

cggctgacac gggcgccttc ccggggggagt gggaggaaag ggaggggagg gattttttat 3120

gttcttctgt gttgagtttt ttctttcttt cttttaaatt aaatatttat tagtacctgg 3180

cttgaagcct agtgttttca taatgtaatt caatgaaaac tgttggagaa atatttaaac 3240

acctcaatgt aggtacatta cactcttgtt gcggggaggg gatttaccag aatacagttt 3300

atttcgtgaa ttctaaaaaa caaaaagatg aatctgtcag tgatatgtgt gtattataac 3360

ttattaatct tgctgttgag ctgtatacat ggtttaaaaa atagtactgt ttaatgctaa 3420

gtaaggcagc agtcatttgt gtattcaggc tttttaaata aaattagagc tgtaaggaaa 3480

atgaaaagcc acaaatgcaa gactgttctt aaatggaagg catagtcagc gagggtaaat 3540

cctataccac tttaggaagt attaaaaata tttttaagat ttgaaatata tttcatagaa 3600

gtcctctatt caaaatcata ttccacagat gttccccttc aaagggaaaa catttggggt 3660

tctaaacagt tatgaaagta agtgattttt acatgattcc agaataacac ttgtattgac 3720

caatttaaac agataccaga ccaattttgc atttaagaaa ttgttctgat tatttacgtc 3780

aactcattag aattcagtga aaagtaacag tcttttgtca cagagaatct gaaagtagca 3840

gcaaagacag agggctcatg acaggttttt gcttttgctt tgcttttgtt tttgaaagag 3900

taaaagtact gatgcttctg atactggatg tttagcttct tactgcaaaa acataagtaa 3960

aacagtcaac tttaccattt ccgtattctc catagattga agaaatttat accacatatc 4020

gcatatgacc atctttccat caaatcaatg tagagataat gtaaactgaa aaaaaatctg 4080

caagataatg taactgaatg ttttaaaaac agaacttgtc actttatata aagaatagt 4140

atgctctatt tcctgaatgg atgtggaaat gaaagctagc gcacctgcac tttgaattct 4200

tgcttctttt ttattactgt tatgattttg cttttacag atgttggacg attttttctt 4260

ctgattgttg aattcataat catggtctca tttcctttgc ttctttggaa tatttctttc 4320
```

aacacattcc tttatttttat tatacattgt gtccttttttt tagctattgc tgctgttgtt   4380

ttttattcta tttacaggat gattttttaaa ctgtcaaatg aagtagtgtt aacctcaaat   4440

aggctaaatg tgaacaaata aaatacagca aatactcag   4479

<210> 420

<211> 4657

<212> DNA

<213> Homo sapiens

<400> 420

gcaaccgaac ccactctgtg ttcaacctga tttatgaaaa agcagaagac aaatgggcat   60

atggaccttc accccccggct cccatcacgc actctggacg ccactgccca ccaaagccgt   120

ggctatgcgc agcttctcgg gccacgcaag gtggggcacc cttacatcag gtgccctcct   180

gctcctgagt gtatccagtg agctgtagcc atgggcaggc gtgttcccca cccccttgctc   240

ccgacgtccg cgtcgtcccc tccttcctgt acggaatgtt cgctcatcgc cgcctcctcc   300

ttgtctcctc agggaatccc ctcttctgtc ctggaaaagg ctcctgtacc agcagtttgg   360

gagtgccgtc cacgaccctg acagtcccag ccctgctgcc ccatggccac gtgcccacag   420

atgtgctgtt ggtccaggtg tcccagtctg gccacagccc tgcctccgcc ctcacctaca   480

tgccctccca gcccctccca tctctggacg aggcctcctt cctcaggttc ctcctgctcc   540

tgacctccca gtgtgatgtc cgggtccttt atcatcctat tcatcctgga gaggaaaagt   600

gtcgggcaaa gggggatctg gggggagctc agcagtgact ggggagctgg tctgcctcag   660

agacagagta gggggtggga gcagagcctc ggtgagggtc ttggccacag ggcagtgcct   720

tcctgaacgt ggcaggcttt actaccagga acgcactcgg tggtggaggc cccatgttcc   780

caggagccaa gattcgtagc atccttgagg ccatcctgat aaaattcggc gctattgccc   840

ccgtagctct ggagctctaa accgtctatc tgcttctgtg ctgaacgcct ttcccatctg   900

ctgacgtagg cccagggctg ccctgcccct gctgccagtg taccgtgagc ggggctccag   960

ccagttcaag ctcagagcca gagctggacg ggccagagct gcgctgcaca cttcctggac   1020

tgaggcgggg actttgggtc ccacccggtt tctcctgatt atggctgctg tggggtgagg   1080

ggagggaggg gcagccccga ggcagtctct tccctttgag aagatatttt cccacaaagg 1140

ggtgggaagc caggagtgag aaggaattca gggagagcaa aggagccagt gctgagatgc 1200

tgctgtgttg gttgaggaaa acctcgggcc tgagggccag gccagagccc aggtctctgc 1260

tgacaatggg ggttcaagga agacgtcgtt atctcccctc cccacttact cgaggagaga 1320

ggtgaggggg ggatgacttg cgggttctga tcaggcccct gggtggggaa ggggcacagt 1380

gtccctcagc agcttacgcc cctggagtct tgggggcccc agcctggccc tggggccttt 1440

tccagctact gtgcccttgg gcagctgcgt ctggggctca accccccaat cctgttcccc 1500

tctccagctg cgggtctgta ggcagctgtc acatctgagg ggtttctgca acctggaccc 1560

catctgggtg tgggtcagac cctgtgaccc acatgccacc cccaccctcc acagagcccc 1620

cttgctggga cagccagctc gcctccaagg acatcccctc ctggctcctc ccccttccga 1680

gtctgcagcg ccgtgggctt ctctgccgat gggcccgggt tggggttaag gtgggcatcc 1740

tccaggtaca acgagcctga agagcccctt tcagtgcaga cggggctgca gagtgacact 1800

ggctgggcac ctgccccacg accaatgaca aggatttcca gctgaatgct ttattcccat 1860

agggatctgg acctgtgccc aagatataaa tactacactt tttttttttt ttttaactga 1920

cattgtgaaa ttctccctat agcttttgcc attcaagcaa cattgtgatc tttcttcccc 1980

gccacgtgtg agggaatgat tgagtcctgt ttgcaagctg gagaggagct ctccctttgc 2040

tagtactttc tctaaagtac tagtctagta aaatttattc ttgttagaag gtcaacaaaa 2100

tatctgttta gcttttatga agagtcaccg tagcagcccc cacggctgga aagaggcctg 2160

tacgttctgg acgcgttttg ttggctgggc ttctggaggc actggcaagg tcaaactgca 2220

tttctttaag aacagttgca ggatctggct cgcctctgtg ggaagccggc attacaggtg 2280

cttggtggat gggccgtgtc acattgccat ctgggggtcct ttggggtttc caggttgtca 2340

ccatgctgtc ccatttggga atcccatacc tgcctgtccc cactgcgctg gctgaccctt 2400

gctgcctgct gcctcttggg agggctttgt ccctgcctct gagctggtgg gcaggatggc 2460

tgggtggccc ccagagaagc acagacctga gatggggtct ccatgcccgg tttgctgttg 2520

gaatgatctg aacaggaccc caaatgcctc ttccctctgg tcatgcctca ctatctctag 2580

gagctccatc ctgtggcttc cagagtgtgc acttccagcc cacccgggca gtgctgagag 2640

ggaggaggag aacaaggatg gcccagcctc ccctccctcc cctagaccac ggggcgggca 2700

gctcgggttc ctggagggct gtttccccca cgctgtccct acatctgctc tgatctaaaa 2760

tgtctttcct tttatgctgc gcccagtctt ggggctcaaa gatttgccca aacctcattg 2820

```
gccctcgtga ctaggctcat ctagatggtg ctcacgctgg tgtttgaggc atttccactg 2880

tgatctccac gaggggatgt tttccgggac acatctctgg ctctgggaac tgcctgactc 2940

actgaagaaa ctacttttca ggcactgtag ggtcacccat atgcctccag ctcagttgac 3000

gcttaaaaac aggtgcagaa aagctcgcga tggaaggtct taatgagagt gtctgtctat 3060

gccaatcatg taaaatgacg tttcttgaaa aagattcagt ggttcagctt tgtcagcatc 3120

atctcaacac aagcctgctg gctctttta gcatctcatc caaccatgtc atcgtccaga 3180

tgagaaatct tagcccaggt gaggggagta acttgcttga ggtcacacag ctggctgttg 3240

gcaaagctgg gattagaacc ctcaacccag ggtcccttcc tctgcagcgc ctacatggtt 3300

ggttgaatag gtggctgcgt ttcctggggc cctgggtttt ggggaagcca gttagctgct 3360

gctttggcac tggcatggag gtgagcagtc aaggatgctg gtgaggctgc agtttctgct 3420

cttttcatc agggggata gtctctagga tttttcagtg aggacccttg ggctttggat 3480

gcagcttgaa ccaagaaaac gaggagggaa agggattcag tgaactattc ctcagtggga 3540

tcggttcttc agctcctgat gggggctgtg taatgggggc agaggccagg gaaaaagatg 3600

ctgttcaccc accctcagct tccctttcc taaattaaga ggaaaagtgg tcaaagaaaa 3660

actcttcatt tctccctgat tcttaaacga aggtggttaa tagaaactca ggctcccgtg 3720

acaaggcagg acaagagcct gtttcgcttt cctccctgac cctgccaggt gccaactcaa 3780

acactacctt tctcattggt ttctaagtca gtagagacag atctgtttta agcagttggg 3840

ggttcgagta gatctcatgg gtacaggagg ccagcaggga ccaggccagt cagccatgct 3900

caggacccct cggctcctcc cccagcctct agctaccctg tatcgaggca ggggggaggcc 3960

agtaaagttt gccaagcctg atcctgcagc ctggtggggc tggctggggt attctttac 4020

caaactctgt tttaccgcca gccccttgta caccccaatc ccatgtctcc ctcccttcag 4080

ctggaccgtg tgcccctttg ggaggaagaa gacaagcccc actagggcca agggcagcag 4140

agccctgccg agtgagaggc tgtggggcag cggctctgtc ctgtgcctta ccagccctgg 4200

ggagggggac atttggctgg aagactggaa tttaattgcc atcgtctttg attttgtgac 4260

atttctgctt ggaagtgtga actacccccc cccccggctt cctgctcctt agcatgcgtg 4320

cagctctctc ctgtttggg tgttacccctt ggacactcca gctcggggac tgctggcgtg 4380

tgagtgtgca gattcccctg tgtggtcgaa cctaagaact gtggcttgga agtgatgctc 4440

catgtgacga cgactttgct ttcttttcctc ttagtgagga ggtgattcgt agatcccaac 4500

tgcctatgta atgtaaataa tgtacattta atttattgct atggtagcac attgtatttg 4560
```

ttaatgtaca aaacaaattc taaaaggttg acaaatgtat attttgttgc ttaaatgtgt 4620

ctttgcagaa attgacaata aataacatat tttgtgt 4657

<210> 421

<211> 4502

<212> DNA

<213> Homo sapiens

<400> 421

ttagtataaa ttctttaggt tcctttttct tgcttggatc ggaatcatct gaaagggctc 60

aggagccagc tgtcgctctg tgttttttgc tactgagtca ctgtttctga caagcccctc 120

ctgagtgtgg gtcctcattt ccttgtctag agtggggttg agcaatgtga tttctaaggt 180

tccttctggc tctgacattc tgtgtgcctt tgttccacac ccttttttcag tgatgccagt 240

gccagggggt acagcctcag ggatgtataa cagggttttc ctccacaaaa ctggcagaat 300

tgttctgggt tcttatttga aaatgtggca tgtggcccct catcagtgct ttggccattt 360

tgcatgcact aactcacaga gaatgcaggc tacaccccag ctggtgagca tcaccatcat 420

ctctatgccc actggctttc tgtttggctg gagggaagct gaggacaaga ggatgttagg 480

ttggagcaca gggaggcctg tggaaggcag ggacggtgta gagtctggcc cagctgaaaa 540

tgggcttggg aagcctggcc agtccttcag gtccatctgg gcaaacctag tcttcaaagg 600

gcagagtcac aaggacctca aatgctactt acctcctcca gtactaacat ttgacacatc 660

taatgcctat tcattgttgt gaagttcaaa tgaggtaact catgaggaag tgcccacaaa 720

actaaacact tatgacacac tctcaaacac actctcaaac aataagaatt actatcatga 780

gctgcctgac tccacaagat tttagtgcta ggtgctaggg acagaaaagt gaaaaaaaga 840

tgctcagtta attagcatac aatgtgatgc tacctctaac aatagacttt ggatgatgtc 900

ttagttcaag ctgctctaac aaaataccat agattgggtg acttacacag caaacgctta 960

tttctcacag ttctggaggc cggaaagtca agatccaggc actggcagat ttgacgtctg 1020

gtggttcagc cttctcactg tgtcctcaca tggcagatgg gatgagacag ctctctgggg 1080

tctctttttat aagggcatga atcccgttca ggggtgctcc accctcatga cctaatcata 1140

```
tcccgaaggc cccgcctaca catagcatca gatagggaat tctgcctcaa cctatgaatt 1200

ttgagaggac acacacattc agtccatagc aacgggcaaa gcttgtgaga gcacagagga 1260

aggagttttt aatgttcaac actctgctcg tgggggtgga agcctccata gcagcactga 1320

cagtttaacc tggtctggaa agatggcaaa gactgcacag gcggagggaa tgggcatcct 1380

agcctgagtg agtggcagcg tgctggagag gcttatggaa acctctggta atctggcctg 1440

gtggctgggt ggggtgggtg ggaccatgtg ggggaagctg cggagggagc tggtgatcaa 1500

attaggaaag gtcttggata atctatgagg agcctggact tcgctgaatt tttcagttac 1560

caggttttaa aaaacttttt atttcagttt ttggctgaaa gaagaagcta ttattttaat 1620

tttatttaaa acctgcctgt ggatctataa taggcaaaac ttaactcaaa tagatttaat 1680

catagccttg ctgcactgtc ctgttaattt tgctactctc cttcctctta gagcttccac 1740

gtagaataca tttatcttct cgctctagtc tcgtcttgat tgaaatattg gagtgagaga 1800

tagaaggtgg gatctttatt ttttttctc tgtatacaga ataatgccta ttttagaatg 1860

tggaaaatac taaaaactat aaagatgaaa aaagaaattt accctctgga caaggttggt 1920

agaagatgag tggttgagct ccagtagaat cagttttgtt caaatcctaa ttttttcaca 1980

tattacctgt aagaccttgg caatttacta tctccaggcc tcagtttcct catctgtaaa 2040

atgggaataa taatcacaat acctacctcc taaagttcct attgggacta aatcattttc 2100

ttcatgcaaa gcacttagga aagtgctgtg tacatagcaa ataattaata tttcttatgg 2160

gttattgcaa caccctctgg gtgagttcag ccctagagga aagtaggtga gttcccttgg 2220

ggaagggtct ttctgcctcc atgttctaca tcaggaaagt ggagaagctt gtcataccac 2280

aggatgaggc tagtgccgag tcacagactg gtgtgtgttc agagtttttc cctggaggat 2340

gctagcttat cctcccttgc tccttccttt ctagcatttc cacccacctc gggctcttgg 2400

ggcaggctgt ccctttaaga aagagagcca cacattctgc tcctgacagt ggccctgcct 2460

cccttgctag ataccttgct gggctgtggt tgggacactc ctgggctgga ttttagtgct 2520

gaagcctcca gaggaggggg cactgcttca aatcaagcac accccacccc aggaatccat 2580

gcccacagaa ggactccctg tctgcagccc cctgctgtgg ccctgggctc ccagcaccca 2640

gctctgggac atcagaagat aattcttgag gactgagctc aggattccta aaaagaaagt 2700

tggaaaatag ctggataaac ttggtaagtg aaagaaagcc gcgttacatc ctcttccttg 2760

gattgtggat tgcagatttt gggttgagtt ctggtgactc ttgccagtgg tatctgatgg 2820

gcaaatgtga gaaggaggag acagaggtgg ggactgggat ccccagtggg tagcgagtct 2880
```

tgaacttggg gatagccccc caccttatcc tggtggttgt caaccttgag gcagggagct 2940

gggggttgac atctgaacat agctggagcc tggcccaagg agtgaagatc cgggaggggc 3000

agatgtcaga tttctccctc atttgggaaa aacaaagtgt ggtcattgag tgctgtttgt 3060

gaagatgcca gagaccagtg acatttgcag cctgagggtg aaatgagtga ccctgtgagt 3120

gtatctcagg aggagacttg gaccaattcc tcttcttcct atagggtcag gggacagacc 3180

aggcctgggc cccaagaaat ctgcgttgtc tccttggatt gaggcagctg cccatgagca 3240

gcagcggaca gtgtcgtagt gggaggaggc aggtctgcca agggcaggga agaatggagg 3300

gcctgttact gctgaagcct gggaacgctg cctggggga ggcccacgct ccccagagct 3360

ggagtgagaa ggaatgggag gagaagtcta tgcagcaggg ggatgggctc agccagcatc 3420

cccaccctct gcagagcaaa tgcccccgtc ccatttcctg tggcatgggc acaggtgagc 3480

ttcctggcct tgaatgctca ggtacagttt ggagggctgg ggtctgttac aaagaggtgg 3540

cctcccatgg aggaagcagg aaatgctaga agcctcagcc cctggcactc acccgagggt 3600

ttccaaatca gagacacttt ctgctaaatt atgcttcaac agatgttttc tgtgttccta 3660

cttgtgccag gctttgtgct ggggatttac caaaatataa tatggcatgg tggaattggg 3720

aaggtgtgca gagctggaaa gatattttgg atgtgagatt aaagccattt ttgaaaagta 3780

acaataatag ttaccattta ttctgtacct tgaatgcacc aatcactctg ctaaaggctt 3840

tgcatctcct ttaattcttg cagtagttta ttgacttgtg cctaattttg tagatttcaa 3900

agattaagaa actaaggctc agagattaag gacctttcct taaagatgca gggctggtaa 3960

atggcaaagc caggatgaac ctcttaagtc gtctaaccat ttattcattt gtgtgttcaa 4020

caaagttgaa ttgctggcct actgtgtgac agccattgta gagggcactc aggacacagc 4080

tgggacaggg aagggtccag ggcagcctaa ctccatagcc tgggtcctca cccccagcca 4140

gagcccttca cactgggccc cagagacccc tgggaacatt gtgtgattgt tttctccaag 4200

gtctgagact ctgcttgaga atgtgctttt ccttgagaaa tgtttctttg ttttcatttt 4260

aataataata ctgtaaaaat tggaggcatt tattctgaat catctgaatg accaccatat 4320

aacctactat tggcatgcga ttttagtccc caggtttgtg tttctgtgca agttggcacc 4380

gagtggtttc ctaaaatgat agtttttaac ttttaatgct ttgtttctca aactgggctc 4440

tacactgtgt gcttcaaagg cccaaagatt aagaaagcgt tcaagctcaa cacccactac 4500

ct 4502

<210> 422

<211> 4678

<212> DNA

<213> Homo sapiens

<400> 422

atttggaaga	tgcttccagt	caagtctcaa	tctcagtcgg	tcactggtcc	atgtatattt	60
catggacatc	taccctgtgc	tgggcactgg	gcagacaaca	gtctactgga	cccagtctca	120
ctctcaaggg	gactgtagtc	caagagagag	gcaggtagat	tatcagatga	agaaactgag	180
gctcaaagag	ccacagcggg	acggaggagg	tggacccggc	tctgatgcag	gtggctggtt	240
cgatggcaga	ctcccctgtg	ccgagactcc	cagaccaaat	ccggaggtcc	tggagtagag	300
tgggtgggtc	cgccagggca	tggccaggct	gcctgtctct	ggagactccc	caaggaagt	360
ttcttgacct	tgaggatgat	aacgcagggc	aggctcttga	gggctgtgca	gggactccct	420
ggagagccct	gggaaaagca	ggtccccgcc	tgcctgggcc	tctgcctctg	ctgcaggggc	480
cagcacaggt	gtcaggtccc	cacacatttc	atgtccaggc	cattttccca	ctctagggcc	540
aaggctgggc	acttcccagt	cagtggcaca	gctggtactg	tggggtctct	cgctctgcaa	600
aggttggttt	caatcccaag	tgtcactgct	ggaaacactg	gccaccccgg	gacatgtggt	660
cttgccagtc	cttctgcagg	gctctgtttc	ttaggtccca	atcatctgca	gggagcacta	720
gtccgagatc	ttccaagatg	ctgggcagga	acaagcctgc	tatgctcatt	cccaaaggac	780
tccacatcta	gataaatgaa	ggcctggaag	gctctttggc	tctacactag	caaaacagct	840
tacgtcaccc	tgcctaaaga	gacagtcagg	aaatcccctt	gttcctgggc	gaggagaagc	900
tggcccacac	ggagtgacgg	cattgagcag	atactaccct	tggctcgctc	atggatgggg	960
cggggcctgc	tgaccttgac	agcaatcagg	ggaggggggtt	cggagggaag	tggttagctg	1020
gtgaaggtga	gggaaaggac	tggagttagg	acagggtgca	gcgaccacat	cctgtgacga	1080
ggaggcatct	gtgacctgtg	tgatctgcca	ggcaggcagc	acaagtcatt	gtactgctac	1140
tatgcccgct	actgagacag	gaacaaagag	aggctgtttc	tgcctcttgg	tgctctccat	1200
tggacatgtc	tgctgggcag	tgctggcttt	taccataggt	atttttctgc	tcttccttcc	1260
ctcctcctct	ccctctctct	tttccagggc	actcacacac	acacacttgc	acacatgtgc	1320

```
acagttgcac acacatgcat tgaacacatg tgcacatata tgcgtttgca tccacttgca 1380

cacccacaca cctgtgcact agcacccatt tgcacgcatg tccacacact tgcacacatg 1440

tgcatttgca gaaatgcacc cttgcacttg tgtgacacac ctgcacactt gcatacaccc 1500

atttgcatac aggcacagac acactcgcat acatttgcac acacagccac aaacttgcac 1560

aagcagcact tgtacactga cacatatccg tttgtgccta tacagtgcac acttacacat 1620

ttgcacacag ctgtgcttgc tcacacattt gcacacaccc acctacacac ttgcacacat 1680

actacacact tgagcgtgca gcacacatac ctatgtgcat acatgcacat ttgcacatgc 1740

acacagcagt ggcacacact tctctatcat tctccctagt cactgttctc ccctgtgatt 1800

cccacccctc tgaccgcccc tgctcacttg ctgccccctc cactggaagg ggcctggcct 1860

ggtgccctgt ctctgtctgt ctccaccgtg cagggaggtt tcacaaggac tggctgatgt 1920

ctcgcctcga gctggcctgg ccgcagctgc tgctgagcgg aagtctctga ggggcgaggc 1980

tgagaggaaa ccacactctc actggggttc ccgcagctct ggcctctggg gaggggtgtg 2040

gagatgtgtg ggcgtgagat ggctttgagg gagggacagc atgaagcttt tcgctgggtc 2100

tgtcttttca gtctccagga caaaactagg ccactgtgcc ccaggagaag ggaaaaccca 2160

cgtccccccca ggctgggccc accggcaaat cgggctccca ggcccttctc agcccatgct 2220

tctgtctctg ccttgtcagg cttattcttt gaggctttga agcagccttt ggtgggcaaa 2280

cggcatctca gggaaccctg gcctgtctcc tccagagctt gtgccttggc cctgggcagg 2340

ggccaccatg ggctgttgat gtaaatggca tccccagagt tgtgcagtgt gggggcaacc 2400

ctgaggtatc agcccagccc cctgtctgca gcttttgcta cccagcccag ctccagctct 2460

gtctttgtca ctggggggtgg tgggggaggc tggagctcag ggacggggca ctcctggcag 2520

attctccctg ccccaggtgg aaggggaggg gggaagtacc catcctccat cctcctatcc 2580

tgccagcggg gtgggcgcta ctatgctggg gagggtctgg ctgaataatg atgctgagct 2640

cgggacacca gccttctccg tgcacctact gtgtgccaag taccatccca agagcattat 2700

gggtggtaac ttatacaatg actcagagag gcaccgctat aatcaccccc agtttctgtc 2760

tggttccagt cctggccaca cagctaataa gcagcaaatg gatttgatct gattttatct 2820

gaacccaggc aggctggccc agagcccact gtctaatcat tgggccgtcc agcctgtcaa 2880

gactccaggc tcgctggcgt cgtacccctc tgtcatttcc cagggaaaca agctctagca 2940

gcacctgccc tgtgggtact ttggccctgc ctccctgcct ccctgcctcc ctgcctccct 3000

gcctctcatg ataggagcca aagaatggtc tcctttgcag gaaaggagct cgacgggggt 3060
```

cttctcttgc aggctctgtc ttgcatgtgg gtcctgagct ttctcattga gtaaggggag 3120

ggggcagctg gttcagtcca gcgcagagtg gatggaggcc ggttgaggct ttcttgaaac 3180

cctaagccca gctgggatcc tcggggaagg atccttcgct gggatctgac tggctcttcc 3240

agaggtcagt ggggcatgtg gctggagccc aagtaggagg gaggaagaaa tggtggtctg 3300

agtcctgggg tgaccaggcc ctgaacctgc cctgctggga ccccattccc tgactctagg 3360

ccccctttcc ccaccacaca ggacaccagg ctcttgcctt aagacaggaa aggaaatgcc 3420

ttatggtgaa caattctcca ggtccctatt gtggctccaa cagatgccag agggacatgg 3480

caggtgaccc tggtctccta cgaccctgac tttacttgct gtcatgaggc caatctctta 3540

ccttgacccca cctcctgcct ctgctttcag aagggcagaa gagcgggcct cctctagctt 3600

cccagccgcc tcccgcctcc tgccgcccgg cagcgctggg ccccccagca gcgaggttca 3660

ggaggggaag aacctctcgc aggtgaacaa attgctgcac atcagacaca ttcttttcaa 3720

gcctcatttt ctctcctttt catgctaact ttcccactat taaagagcat ttttaaaaag 3780

aagatgaaaa aaggcagaga gaaaagaagg atgaaagtgt gagcgggtat ccggaagtcc 3840

ttttcaattg cctgctgctg tgcagggtct gaactaagag caagaaattg gaggatgctg 3900

gaggggcgag gtttcgtttc agtcctgcct attgggccaa gtctggggcg gggaaggaga 3960

ggtgatggag gtgggcctgg ctgggccctg cggccctgga ggctgcccct ctgcctgcca 4020

cccagcccct ggcctgtgcc tggcacagga agcccgtcaa taatttcttg ttgaatgaat 4080

gaaagaaaag aaatcagtgg atggagaagg gctggattct tttgtgggga ccttccacgc 4140

caccttctct gtggggctct agggctgaga aagaaaggac agatttggca aaggtcaggc 4200

aggggctggg aaagcattag gtggaccagg catgctacag caaggccacg cctgcactgt 4260

tgtcccactg gtgacaccca tgggtgcagc catggcgggt gggcgcagtt tcacatggga 4320

ttgggggtga gcctgggttg ggtgggcgac ccccacccct tccctacccc tctccccacc 4380

agcaggtact actgggtctg cgtgaagata aaagctcagg aacatgccag gaaggtgtga 4440

ccatgatgat acctctgaga tgaacccaag aagaaacagc agagtattac aaaggggaac 4500

aggactcagg gtggacttca agtatcatta aacataatca aatatttaaa aagttattat 4560

tgactgggtg cagtggctca cggctttaat cccagcactt agagaggcca aggtaggaag 4620

attgctttag cctaggagtt tgagaccagc atgggcaaca tagtgagacc ccatctct 4678

<210> 423

<211> 3600

<212> DNA

<213> Homo sapiens

<400> 423

atttcagata	ttcgattttc	acctggttct	gggaaatatc	ttgctgtagc	atcccatgac	60
agctttatag	atatatacaa	tgtaatgagt	agtaaacgag	taggaatatg	caaaggagct	120
accagttaca	taacccatat	tgattgggat	attagagctt	ttacaggtca	acactggtgc	180
taaggaacaa	ttattctttg	aagctcccag	agggaaaaaa	caaaccatcc	ccagcgtgga	240
ggtagaaaaa	attgcttggg	catcatggac	aagtgtactt	ggtttatgct	gtgaaggaat	300
ttggccagta	attggagaag	ttacagatgt	aactgcttct	tgcctcacca	gtgacaaaat	360
ggttctagct	accggggacg	atttgggatt	tgtgaagtta	tttagatatc	ctactaaagg	420
gaaatttgga	aagtttaaga	ggtatgtggc	ccatagtaca	catgtcacaa	atgttcgctg	480
gacttatgat	gacagcatgt	tggttaccct	aggcggtaca	gatatgtctt	taatggtgtg	540
gacaaatgag	atggaaggct	atcgagaaaa	aaggccttgt	gatagtgaag	aatccgacat	600
tgattctgaa	gaagatgggg	gctatgacag	tgatgttaca	agggagaatg	aaatcagtta	660
caccatcaga	gccttatcaa	caaatattcg	cccaatgtta	ggaatcaagc	ctcatttaca	720
acaaaaagaa	ccctcaattg	atgaaaggcc	tccagtgagc	agggccccac	cacagccaga	780
gaaactccag	acaaacaatg	taggcaagaa	aaagagacct	atagaggacc	ttgtgttgga	840
gctcattttt	ggttatcgag	gcagagactg	taggaataat	gttcactatt	aaatgatgg	900
tgatgatata	atttatcaca	ctgcatctgt	tggaattctg	cacaatgctg	ctacaggttc	960
tcagagtttt	tatcaggaac	ataatgatga	tattctgtgc	ctcacagtaa	accagcaccc	1020
caaatttatc	aacatagtgg	caactggcca	agtaggtgat	tcagcagaca	tgtcagctac	1080
agctccttct	attcacatct	gggatgcaat	gaacaagcag	actttatcta	tcctaagatg	1140
ctaccattca	aagggagtat	gttcagtcag	cttcagtgct	actggcaaac	tattgctgtc	1200
tgtgggacta	gacccagaac	atactattac	catttggaga	tggcaggaag	gtgccaaaat	1260
tgccagcaga	gctggtcaca	atcaacgtat	ttttgtggca	gaattccgac	cagattcaga	1320
tacccagttt	gtctcagtgg	gagtaaaaca	tgtgaagttc	tggaccctgg	caggaagagc	1380

```
tcttcttagc aaaaaagggc tactgagcac actggaagat gcccggatgc agaccatgct 1440

cgctattgca tttggtgcaa ataacttgac gtttacaggt accatcagtg gtgatgtctg 1500

tgtgtggaaa gatcacatat tgtgtagaat cgtggcgaga gctcacaacg ggcctgtgtt 1560

tgccatgtac accaccctgc gagatggact tatcgtgact gggggaaagg aaaggccgtc 1620

aaaagaagga ggagcggtta aactgtggga tcaggaactg aggcggtgcc gtgccttcag 1680

gcttgagaca ggacaagcca cagattgtgt tcgttctgtg tgcagaggca aaggcaagat 1740

ccttgttggg acaaggaatg ctgaaataat cgaagttgga gagaaaaatg cagcttgtaa 1800

tattttagtt aacggtcatg tggatgggcc aatctgggga ctagcaacac atccttccag 1860

ggattttttc ctttctgctg cagaagatgg gacagtgaga ctttgggata ttgctgataa 1920

aaagatgtta aacaaagtga atttgggaca tgctgctcgt actgtgtgtt acagccctga 1980

aggggacatg gtggctattg gaatgaaaaa tggagaattt atcattttac tagtgagttc 2040

tctaaaaata tggggaaaga agagagacag gagatgtgca atccatgata tcagatttag 2100

tccggattcc cggtatctgg cagtaggttc tagtgagaac tcagtggatt tttatgacct 2160

aacgctgggc cccactctta acagaatcag ctactgcaaa gacattccaa gctttgtcat 2220

tcaaatggac ttctctgcag atagcagtta tctccaggtc tctagtggct gctataaacg 2280

gcatgtctat gaagtgcctt caggaaaaca tcttatggat catgccgcta ttgacagaat 2340

tacttgggct acatggacta gtattctagg agatgaggtt ttgggaatct ggtccagaca 2400

tgctgagaaa gctgatgtca actgtgcctg tgtatctcat tcaggaatca gtcttgttac 2460

aggagatgac tttggcatgg ttaagttatt tgacttccca tgtccagaaa aatttgcaaa 2520

acacaaaagg ttcttgggtc attcgcccca tgtgacaaat attcgattta ccagtggtga 2580

tcgacatgtt gttagtgctg gaggtgatga ctgcagctta tttgtctgga aatgtgtaca 2640

tacacctcac tgagagatgc tgagatgact acagaaatta actttgagac cagaattaca 2700

gagaagaaaa accaaaaccc aaccctgcat ggtcaagtgg tgctaaccca agactgtaac 2760

agggagaaat gcccagaatc atcaaaatag tgaaagactg atctgttcaa aatatttgct 2820

atatgcactg ggtataatcc gtaatccata cactgccaga taatgccatt tcaaggaagg 2880

atcgaatact tgatggtaaa ggccaagtcc ccctgtattg ggaagtgtgt gatttcggca 2940

gacctgctgg gaaaatttag ggtagagcac tctttacaga agaactcaaa aacccaattt 3000

ggataatttt cattatcttt ttagcaaaat ggtttcttaa tgtttatatt ttattttcaa 3060

ggttcattgt ttaatgaaat attttattct tgcatttcca taaggaaagg gaaagtcatg 3120
```

atcatcctaa aggatcacag tttttaaaag gcaaacattt tccctaagga aacagacaca 3180

agctttccta gagaatatga tgtttttttag gcattaataa ggtcctttttt tataaaggac 3240

actttctcc tagtagtttt gaattcagga acagatccaa agttagcagt atatggctgc 3300

tacatttcca ttttcatttt cgagccatca gtttatgttc agatgccatc tctgtaatcg 3360

cacatttaaa acataactgt agcctcacta atggaaaagt agtatgatga acaatcattc 3420

ccaatggtgt acaatgtaag ggttttaggg agcaacagta tttaactgga agaaagaatt 3480

gcatatttaa tgtagtctaa tatatacaca tttgtttaac atgtaaacaa aagtgttaaa 3540

ttcacatata caacattata caatttaatc actcttggaa taaaatttttt atagccttttt 3600

<210> 424

<211> 3466

<212> DNA

<213> Homo sapiens

<400> 424

gactcctgcc gtcacgcccg gggctccgcg tagcagagat cgggagacgc gtctgtgcct 60

ccggggaagc cgacccatct cccctccgcc tctttggctg cagttgcacc cccggccaga 120

gggcaggcgt tggaggttaa gcagagagag agaggcgtgg acctatttac gagatgtaag 180

ttgtgttctt tccacctttta ccttctgagg gcttcttacg cctcatggtg acaggtgcaa 240

atcatgacac agaagggcag tatgaagcct gtgaagaaaa agaaaaccga agaacctgaa 300

ttggagcccc tgtgctgctg cgagtacata gatcggaatg gggaaaagaa ccacgtggct 360

acttgtttgt gtgattgtca agatctggat gaagggtgtg atcgatggat tacatgtaaa 420

tctttacagc cagagacttg tgaaagaatc atggatacaa tttctgatcg cctccgaatt 480

ccttggctta ggggagccaa aaaagtgaac atcagcatca tccctccgct tgtcctgctg 540

cctgtcttcc ttcatgtggc ttcctggcat ttcctcctgg gggtggtggt tttgacctcc 600

cttcctgtgc tggcactgtg gtactactac ctcactcaca gaaggaaaga acagaccctg 660

tttttcctga gccttggact gttctctctg ggctacatgt actatgtgtt cctgcaggaa 720

gtggtcccca aagggcgtgt gggtcccgtt cagctggcgg ttcttacctg cgggttattt 780

●

```
ctgatactct tagccttgca cagagccaag aagaatccaa gctacctcag caatccagca   840

agcggtgaca gatctctaag cagcagccag ctggagtgcc tgagcagaaa agggcaggag   900

aagaccaaag ggttccctgg ggcagacatg tcgggcagtc tcaacaatcg cacaacaaag   960

gatgacccca agggctcttc caggatgcca gctggaagcc ccaccaaagc gaaggaggac  1020

tggtgtgcca agtgccagct ggtgcgacca gcccgggcat ggcactgccg gatatgtggc  1080

atctgtgtga ggagaatgga tcatcattgt gtctggataa atagctgcgt tggagaatca  1140

aatcatcaag catttatact tgccctttg atcttcttgc tcacctcggt gtatgggatc  1200

acactgacct tggacaccat ttgtagagac agaagtgtct tcacagctct tttctattgt  1260

cctggagttt atgcaaatta cagctcggct ctgtccttca cctgcgtgtg gtactctgtg  1320

atcatcacag caggcatggc ctacatcttc ctgatccagc tgatcaacat cagctacaat  1380

gtgactgagc gggaagtcca gcaggccctc cgacagaaga ctgggcgccg gctcctctgc  1440

gggctcatcg tggacacagg taaggtgcta gcacacttgt gactgtggct ggaagaggag  1500

aacagacact cctgtgggga tgctttactc tcttttctgg ggccagatga gtttattgtg  1560

gaatctttga aaggacaagg cctctgtgaa tgaatcagtc ccagggaagc atttggtggt  1620

ggcggcagtg gaggattgcc cggtgaacct ataaatcagc agtctcttgg gcagaggagc  1680

aagcccctcg aacatgattt caaacaagca ggtcctcttc tctcatctca cgtccttagt  1740

ctctgttaat gaacatactg gatgtggagt ttaataaatt acctactatc atctggccac  1800

ttagattatt atcacaccac tgtggactgt tcctggggggg agaagaacag accgatttga  1860

aagattcaag ggagaaagat taaggatcag gattgcatga aagaagaaaa tccttcaata  1920

tttaaaatgt ttcttacaat acccacggag cactttatg gttccagccg agcgttcctg  1980

aaatgaactg accattaaca gcgcctcttt gataggttac cctgatgctg ctaaagtaaa  2040

gccttaagtg tgttttgggg acaacgtgct gcttattcca cctcagccac atatgtgttt  2100

gtgtttagga tattgtaaat ctttgctaag tagtgtttc cttggtgaat gaagtcattg  2160

ttgtcttcaa gtgtaccatc tgcctagcaa aaaattgcta caaactttct cttatgcaat  2220

agtccttggt acttctaata tttttagcaa gagacaattt tctgtactag aatcttccac  2280

tgccagaaaa cacagtgcca gtaaggttct acataccact gaccatctgc ttaatagaca  2340

tgtatttcct ttgagtagga cattagcttt tgattataaa gctcaaccag tataagcaaa  2400

aatataacat ctagaagcac agttttagcc aggatgttta aaaattacag ttttgtgaga  2460

cttaagggtc tttttaacct aggtaagttt atatgaccta acttaattgt agccatattc  2520
```

```
tggtaccttc cattttgaaa agtagaggtt gcttaagcaa gcaatggata ataagagact   2580

tttcctgagg cacctgtttg gaatctggtt ttctcagcgg cagcttgaca tgtgcaccct   2640

tttgtattaa acactgcaag ggtgatgcag gggagcagga aagccatcct aaactcacta   2700

ctgagtacga ttcagtatgt tcctgtggat gtctgctgtg actaatataa atttcttgca   2760

gaatcagcta cacttaatta tgttgctgat agacaagcat ccacgcttca gctgggacta   2820

agtgttttca ttgtaggatc agcagcaggt taaagactga acggttagtg aagacaaatg   2880

tcttaagagg ctgcgatgtc taggttgggc ttgtgacttc ttagtggcct agccttcttg   2940

atggcacctt gaaagtgaac ttctagaaat ctacatttaa aaggcaaagc tttaaaagca   3000

gagctagtct attctagtta ctgatgcaac taaaattctg tatttcttaa gatggagcca   3060

ctgacgagat gtcacagtat agagcctgca gtctcaactc attgtgatcc taatggtctg   3120

ggtgattgga tggtttgagt tgttagggat tttgagtttt tcattttatt gcatatctgg   3180

gttggatgtt agactaaagg aaacccagga atatttacct ggtgttacat ttaatattta   3240

atgtaactgg tctagcaaca ttaagggga tttctgaagc caactccgga ggctgtgggc     3300

tgcacatttt gcactgtttt tatatacttg tattcatatc ctcttatcac ctcagactca   3360

gacacaaggc cttttacatg gaaattttac aaattacttc catttatgta aaataacgtc   3420

ctgtgaccaa gttgtttaaa tggaaaataa agtgctttct ttaagg               3466
```

<210> 425

<211> 4077

<212> DNA

<213> Homo sapiens

<400> 425

```
gtaagctgaa ggttgggcgc agtggctcat gcttgtaatc ccaatatttt gggaggccaa    60

ggagggtgga tcacttgagg acaggagttc aagaccagcc tgggcaactt ggcgaaaccc   120

tgtctctact aaaaatacca aaaaattagc cgggcatggt ggtacccacc tgtaatccca   180

gctgctcggg aggctgaggc agaagaatgt ttcaacccag gaggtggagg tggcagtgag   240

cgaagatcat gccacactgt actctggcct aggtgacaga gcaagactgt ctcaagcgta   300
```

agctgaatat ggggggtgggg tggggggtggg cacagcacaa gtggacatgc ctttcaggcc　360

caggatggcg catgcaaagg cccagaggca gaaacatgtt tggtatgttg aagagcagaa　420

caaagacaag catggcagga gggcaggagc taaagcagtg gtgtggaagg aggccaagag　480

gcaaggattg tttgtggcca gggttggggtg tttgggtctt aagtgttcag gaaaaccatt　540

gcagaatcag gcagaaggat gcagtgatgg ttcctcccgt gtggaagatg aatgtagatc　600

ccatggcttc tgtttgcttc gtgaagtagg agagaaaatc tgggagaggg aaggtcggga　660

taaagtgtat aaaaaagggg tcttttgaaa tagtcatttt ggacagtggg ggaaaggaac　720

atcatattaa aaagtgtgat cagtttccag gcagtttgtg ggctggaaaa ttgtgattgt　780

gaagttaaag tgaggccagt tagcatggcg tgtgtttccc agcgacactg ggtatagatc　840

taaggtcagc ggacagctgg tgccacccgg ctgtggagac cccagcaagc acagcaggag　900

gggcagcggg tcagtgcccc gatgcagctc aggggggtgca ggagtggaga gcgggtgaag　960

tcagctgcag gaggggtggt gcctgcagga gattcgggag ccggagcagt tgtggtgaca　1020

gtgtggctgc aggagtggtg gcaggggtcg gggagaggag gtcatggggg tggcagggcc　1080

gaggggctga gaggaccatc agtcagcctc acagggcgaa gtcaccgtga gtggtgatgg　1140

ggaggaagcc agtgagccaa gggtcctctg tgaatcaggg agtgacctgg cagttgacag　1200

gtgacatgag gacatggcag attaaagtga tttgaacctg agttacggta tttagggaag　1260

gaagagaaac tgtgtggaag cagcgtggga gcacagggag cttccccttg tccgggccgg　1320

aggccaagcc ctgagagcag ccatccctgc agaggggctg ccagagaggg catcgggcag　1380

gcagccagag ccagtcaggg caaggccggg gaagggaggg gaccacgggg catcacaaaa　1440

gacacaggac ggacaaacca ggcttcagag gggaggggac ggtggctagg gggaaaaggc　1500

ctgaacagag gaggtagcca acccaggtac gctaggaggc gggggcccca gagtactccc　1560

ctctgcagcg atggtcagga ggcccacgag gtggctgcgg ggcagggggg ctttttctct　1620

gccctggcgt ggccattagc gggtgggaga agcaggctga gctggggcac caggcatgaa　1680

gactcggttg tctggctcag ctgctgatgg aggagtgccc cagaagcaga agtggggctg　1740

agggtcccgt gggaagtgcc ctgcagagca caggctcctg cccggctcct cgcctgcctc　1800

cgccctctgc tcactggcca gctctctgtt ctcttcattc caggcaccgc cacccccacc　1860

tttggtcaga acacccctgc gcctggagtg ggcacatcgg gcagcagcct ctcctttggg　1920

gcatcttcag cacccgccca aggctttgtt ggtgttggac cgttcggatc ggcggcccct　1980

tcattttcca ttggtgcggg atccaagacc ccaggggctc gacagcgact gcaggcccga　2040

aggcagcaca cccgcaaaaa gtagcctttg tcccctgtcc ctgttccccc caccccttcc 2100

ctaaatctgg accttggcac gtgctagaaa gagccttgga cccttccagc tgcgtaaagc 2160

aaacctaccc cggatctctg gcttcagccg ccaggggca gtggcagccc tggggccctt 2220

tcccttctgg aggaagcaca agcctcaggg aaggggaagc aggatgcgga gggccaaagc 2280

ccgggacctc tacttgaaca gttccactgg ggaggctgga gaactaagga cctgtacata 2340

gtgtccgctg ccctgactcc cgcttagcgc acccttaggc aggcgcccct tccacctttc 2400

cccgagagcc gtcgtcgctg gaggggcag ggtccagccc gcctggatcg gtggtgtgca 2460

cctgatggga tttgggaaat gggttatccc taaagcttta tcttgcttgg cttagctgtg 2520

agaagtggtt ctcttcctct ggtcccttct ggggactctg tttccccatt tcttgctgct 2580

gtgtccctca ccggttcctt gcaggattcc ctcctttta aatgcccttg aatctagctt 2640

tgccttggag accccagtgg gtgctgctcc tgccgttttc ttcctgccaa gcctgaatca 2700

atgtttcatc tccaaccctc tgccagtttg gcccctcaga gcttggtggc tcaagactgt 2760

tagcctggca gagccagggg tgaagggaga agctcttgga gcaggcagga tgcccaccgc 2820

tgcttcagct gcctcctcgc ccagctaccc tttggcccca ttgggccctc gtctgcctct 2880

ccaggattgt atgtttcaag ccttgtcctg tgttcctttg tctgacgctc tgtgtattgc 2940

tctttgaatc gagtttggag gaagagttga gttgtatgag tggcggcatg ttggtagtgc 3000

cggacttcct gtttcaagtt ttctggggcc tcgctaattg aatgtggaaa gtagcaccac 3060

ttgacggcta caagtgccga ctcctgaatt ttcccatggt gttctgactt caagggctgg 3120

cagccaggga gaatgggccc aggggaagca aagacctctt ccctctgcgg tttctgtccc 3180

acttaactga cctcactgga ggctacgtca cccaaagtag atgttagaaa acctaaatta 3240

atgaaccata tttttaaaat cctattttc ccaaacaggg ccctctgcag cccatccttt 3300

ccttccgtcc ttctgaaacc acataccca ggcccaagcg ccttgctgtc acgcccaacc 3360

tctttggtag aagtatgaat gcgtgtgtct aaattaaaag aaaaaaatat ttaaacgttt 3420

tttaacaaaa atttatttt gtatttaagc taaattgcct tttaaattcc ttcaagcttg 3480

gttcattgag gtggttaagt ataaatgcta ttaactagga attagctgta tagttaagtt 3540

atgcctgtgc aaagaagagg ctcaaatgct gtccccggca gctttcctgg gggactagag 3600

ctccttctgg ccatgttata tgaaatgtaa ttcttatttt ataataatg tgatgtagat 3660

gtaaccggtg cccccctcccc gttgtgactg agggcgagtg ttatacctgg ctgcgtgtgc 3720

agctgaggag ggagtgaacc tcaagcctaa atacctgtta ggattggagg gtctgggtgg 3780

gcctgggcct agcaatcaat caagcttcta cctgtacctt atgtaaggta gaccctccta 3840

gtgtcagtac ctgagcttgt ttacctcagt tccgcaggca ggacagccgg tccgggaacc 3900

ctgagtgaga gtgagtgtgg atgtgtacag tacacacact ggacggcagc gggaggctgg 3960

gactttccat tacaaataga gacttcattc ctgttgagtc tagttggaat ttttagtatg 4020

aatgtgagat ttttctcctg cttgtgacat taagaataaa aaactgtgat ctatcgt 4077

<210> 426

<211> 3332

<212> DNA

<213> Homo sapiens

<400> 426

tcgcccaggt gtggctctgc ctccgatgcc caggcagtgg tctttgctgt gtcattttgt 60

tacaagctcc ttttccgtcc atttagcttg cagctttctt tgtgtcagag actttccctg 120

gatgcacatt tatgtttcag cgagtcagga aaagctgttg gaagtcttct gtgtgtgtgt 180

gggaattctg ggcttacctg tagggcaaac gtggcgagct ggcttttatg cttgggaatc 240

cgcacaggtc aggcccttta ggtcttttgg ggagtgtggc tccatctccc cagaaatgga 300

ttctgtgtgg ctggatggtg gatctatgag cagggcagtg gactgggctt gagtgagggc 360

tctgtagggt gcagatattc catgaactct ctgttttcaa ggaatcactt ctgcccttta 420

ggattggtgc ctgaggattg gtctgagtct gggggtctct ggttcagttt ctccaaggaa 480

atgatttctt gatatctcat tgccacgtgg gtggtgggcc cagtgccctt tatacagacc 540

tttcaccatc cctcatgtct gccccactcg cctgacagca gggcctccag tcccagagtc 600

ttcctggggt ctgcccggc tggtcagctt ctcagcagca tctccctctg cagagcccat 660

ccgtgcacct gctttccatc gtccccaatc tgataccgat ttacctggcc tctcctctct 720

tgttgtgtta ttcttgtgaa attatactat tcactttctc tttttttttt tttttttttt 780

gagacagagt ctagctcagc cacccaggca ggagtgcagt ggtgcagtct ggctcactg 840

cagcctccgg ctcccggggtt cgggcggttc tcctgcctca ccctcccgag tggctgggac 900

tgcgggcgtc tgccaccaca cccggctgat ttttgcattt ttggtggaga cggggtttca 960

ccatgttggc cgggctggtc ttgatctctt agcctcgtgg tctgcctgcc tcggcctccc 1020

aaagtcctgg gattgcaggt gtgagccacc gctcccagcc tgttcagttt ctttactccc 1080

atcttagtgg ggttgtggaa aggcacgtca ataagcatat atgttcaatc catcatgttt 1140

aaacaaaact cagtacacta tcatttgtaa gggtgcctgg cattaggacg gccagcgtta 1200

ggacattagg atagccagca ttagagcagg cagcgttagg acaccgggcg ttagcattag 1260

gatgctcagt gttaggacac ccagcgttag gacacgcagc gttaggatgc ccagcattag 1320

gaacgtgctg ggattgcagg cgtgagccac cgtgcctggc ccctaagtat attcttgagt 1380

tttgctcttg atatggtcaa gtcacttaga aagagtttgg tcctttcctc tcttattttg 1440

gaactttgct aggtgggatt cgagcggtat tctgtctgaa gataatttcc ccacactcaa 1500

gcccataccc tttttattac tctgatggac gccctttgat ttatgacttt ttcttctctg 1560

tctgttggga acactctcat taaaaagcag aattgtcaga ttggataaaa aatcaagatc 1620

cagttctgtg ctacatacaa gaaacccact ttaaatataa aaagactctg ctgggtgcgg 1680

tggctcctgc ctgtaatccc agcactttgg gaggctgagg cgactgaatc acctgaggtg 1740

aggagatcaa gaccatcctg gacaacatgg tgatacccct gtctctacta aaaatacaaa 1800

agtttagcgg ggcgtggtgg cgggcgcctg tagtcccagc tactcgggag gctgaggcgg 1860

gagaatcatg tgaacccggg aggcagaggt tgcagtgagc tgagatcgca ccactgcact 1920

ccaacctggg tgacagagca agactctgtc tcaaataaat aaataaatat ataaagactc 1980

tagtcaggta aaagtgaaaa gatagggaaa aaataagaag aaaacttgag tggctatatt 2040

aatataagac caaggagatt tcagtgcaag aaatattgcc agggatgaag gaagtcattt 2100

cctggtgatt aagaggtcag ctaatcaaga ggacatcatg gtctcaactg cttctacacc 2160

cgacagctga gttccaacat acgtcagcaa agacagaagg aggtcacagg agaaacatac 2220

aaacccactg tttgagctgg agatactcaa ctcaaaggac agagaagcag gaaggacaga 2280

caggacttga gcagcacagc cagccaggct gacctgcttg atgttcacag acgctctgag 2340

cagcaacagc agagtagtcc ttcttctttt caggcacaca tggagcattt gccaagacac 2400

accatattcg aggccctgaa acaagtctca gtgcacgtga aagggttcaa gtcatgcaaa 2460

tatattctcc aactacaatg aaatgcaatg agaaataaag acagagaggt atctagaaaa 2520

tctcccaaat agttggaaac taaacaacac acttctaaat agcccacgag ccaaggaaga 2580

aatcaaagtg gaaattagag gctgggtgca gtggctcatg tctgtaatcc caacactttg 2640

cgaggctaag gaggaaggat tgcctgaggc caggagttcc aggccagctt gggcaacaga 2700

gcaagatccc atctctatga aaaataaaaa aaaaattggc tgggcacagt ggtatgcacc 2760

tgtagcacta gctgattgga ggccaaggtg ggaagatcac ttgagctcag cagtttgagg 2820

ccagcctgga caacctgggc aatgtaggga gatcccatct ctataaaaaa tttaaaaatt 2880

agctgggcat ggcagtgtgc ccttgttgtc tgaactactt gggaggcaga ggtgggagga 2940

tcacttaagc ccaagagttc aaggctgcag tgagccatga tctcaccact gcattccagc 3000

ctgggtgaca gagcaaggtc ccacctctta taaaaaaggg aaattagagg ctgggcgtgg 3060

tggcttacac ctgtggtccc agcactttgg gaggctgagg cgggcggatc acctgagctc 3120

aggagttcga gaccatcctg gccaacatgg tgaaaacctg cctctactgg gaatacaaaa 3180

attagccagg tgtggtggcg ggcacctgta atcccagcta ctcgggaggc tggggcagaa 3240

gaatcacttg aacccaggag gtggaggttg cagtgagcca agaccacgcc attgcactcc 3300

agcctgggca acaagagtga aattccatct cg 3332

<210> 427

<211> 4850

<212> DNA

<213> Homo sapiens

<400> 427

tttagttgtc ttccaggcac agcattcaaa acaacaaccc acaaacctct cagagagagc 60

aagctgcttc tcaggcaaag tcacgtccta ttttgtataa agcagagaac tttaaatcaa 120

agagacatag agacatagtt ctgactccac gtgccccatg ggtaccagat atgccacctg 180

ggcttccagg tgaatggtgc tgttagcttc cccaggtttg gtggaagcac aaaagcctgg 240

tgtgcctcac ttggggtctc tgatagacag ggactgcctt cataagatgt gtttggaaat 300

gagtggggggc acctctgctt gtcaccatga ctggggggcat tttctgggcc agagccaggt 360

gtgctcaaga ccctataaca tccagggcag agccacaaaa caaagatttt atctctacca 420

aaatgccaaa gagcccctat caaggaatgc tacccagagc ccgttcaggc gtatcttcca 480

gaataaagca gcagtctgcc cccaaaggag tactgaagac ttctgaggtt gaaaactgca 540

cgttgccttg aggttagttt tttctaggtt ctatccatca aggcttcaaa cattttaagg 600

ttcaggtttc atttgggaca ccttgtttat tagccctctg atagctttgg actcctacag　660

acagaacatt tttgcctttc cagtcccctt atggcactta ggtagtgctg agatggcctt　720

acagggaaaa agcgggcacg gggcacatca cttgaacgta aagcaatgtt cggggtacac　780

agcatccctg taccaaagct cgtcagtgcc aattatattg tgaattacat tttcttattt　840

ccaaagtggt gtcctataga gttgttattc cttctttaaa gtccagctgc ctcataagaa　900

atcagagatt ttacttcaaa gcttccaaag gattggtatc ccgaagttcc acagttcatt　960

tgaatcaaaa attagatggc tctgttgatc agaacaacca agatagaggc tttctgatta　1020

taaatacatt ttagacctgc ctagagcaga ataggcattt ggaaaacata gatttatttt　1080

tacaagcaaa ttactctggc gtgaggaatt cattatagag tggtaaaatt aaatggttac　1140

atttcattta taacttataa gtatcatttt acaatgtgca tctatgcatt ggaaggaact　1200

gttgcctgtc attaaatatt ttctgtttca tgttcctttt acatccatta aaatgcttat　1260

cagattggtt gacgttatat ccagctagaa gccttttcca agtgtaaatg gagatgcctg　1320

tttaagtcag cactctccaa aaagtgactg tgtcagggag cgtacacgga cttcatcaat　1380

gcaaagggaa gctgggggca aagagtgctg atcctgagca ggctgggctg ggctcaagtg　1440

gaaggagctt gcaccaggtg cccacatgtg cttgggagac actgctctgt aaggaagatg　1500

gtgccacgct gtttcctaaa gagagactga cctttcagga caagttattc taggccacct　1560

tgacagaaag gacgtagagc acagcaaagc tgcagacttt atagcgtccg tccaggaagg　1620

aaggagaaag aaaagctctg tggatttatt ttgcaatcca tttagcaatg tccttaaccc　1680

caatctgatt agtaatttct ggcttggcac tttcacctaa acaaaggtgg gggtagtttc　1740

ctcctttgtt ttctgattcc tccttcttcc ctcactccct gcagggaccc ccgtgttgtc　1800

cctctcttcc tctgcctaca ttgtttgttt gaccagatgg atgtgactgg atgtgaatga　1860

gaactgctca ccacgcgccc tgttattcgt ggtgctttat ctctgaacag acgctgacct　1920

tgaagcttag gtttccattt caaagtagtc tttaatttct cttccatttg tcgattgtgg　1980

tgtccgccac tcatgtagta ccaactgtat actaaaattg aacattgctt attggatttg　2040

gacttggggt tttgaaaatt actgttttct taatttaaca aaaaatttac aagattcctt　2100

tgccacatgg agagagaatt tggagctgcg gtttggccag gtattttcta cttaatgtga　2160

aaagaaacaa aggaatttgg ccccaaatgc caactgttgc tgtgcagact cctgtgatag　2220

gccctttagg aataaattta accaatacac agttcttgag cttgagaaac ttgcagtaaa　2280

aacaagccaa aaagaatgtt aggtaacaaa aatacaaggt aagctgaggg ctctgaaatt　2340

taaaggcttt tccatctacc acaatttaag agatgacata tctgagcaca atagcagaat 2400

tagaagacat ctgtcattaa acattttttt gttttgtctt ggtctttggt ccctccctaa 2460

tgtgttcatt ctgcctttgt tggtcatcat ttttgagaag taatatcctt ccagagagcc 2520

cccatatacc ttaggggatt gcattagagc cctggttctc aaagcatgat ccctggacca 2580

gtagcatcag cattgcctac aaacttctta gaagtacagg ttttcaggcc caaccccaaa 2640

cctactgagt cagaaactca gaaggtggca cccaggagtc tgtgttttaa caaaccctcc 2700

aggagattct gctctgcacc agcgtttggg aaccactgcc ttagagaaag gtggacccgc 2760

cagtgtgtga agcatctttc ctcccactgt gccctgtagc attctagtca ggctaagtgc 2820

ttgtcattaa tagagttcca ctggcaaata agctcaagaa aatagacctc cttttcggac 2880

atttgctaca ggtgtcttcc tcttcaaggc tctgagaagt cctgcactaa gaagatttca 2940

ttcactttaa ctagcagctc ccatacttat ttgagcacag aatacattgt taccatgtga 3000

tagatacctg tcattggtag tattctctgg aacatgtttt gggagaaact tctagagaga 3060

gctttgtcct atgtgctgtc agtctttaat gtgccgtaga tagaaacaca tctctcccct 3120

aacaacgtgg gactcatgcc tacccctttc tagagaaagc cagactggaa gccagcacaa 3180

tgagctcatt tgtcttcctt gttctccact gcatctccac cttgccttcc actctcattc 3240

ccacttcatt ctctgctctt caaccagaag atagggtggc ctgctgagcc ctacctgaac 3300

cacagagact gcttcatgtc catccaccca gagtgtggtg tttgtgtctc cattcttcct 3360

gtatttgtga agctaatgca attagattag attacaaatg gtgtataggt atcttgtggt 3420

ccatgcattt tggcaagctg cattcattat caaatattca tatattcatc ttaactagcc 3480

tgtcccaaag atcagatttt tttcattctt ttatgatttt ctcaaaatta tgatttcatt 3540

gtagaagtaa aatgtctatc attatagctt tgcctaagtt gtagcatttc ccagcttagt 3600

tgaagaaatc tatgatcagt aaagtattag gcccttcaca tgcattatct caatctcatt 3660

tactcctcaa aatggatggg gtagagaaca ttgtgaggta ggtgttgtta accccatggt 3720

atagacaaat ggagaagttt acagatgaca tgcttgcccc agttgcacaa ctaggggttt 3780

acaatggagt gagattgcca gagtttgaat ctctattctg ccacttcaca gctgtgtgac 3840

ctggggcaag ttaattagcc tctctgtgcc acatttccct cttctgaaaa atgaggataa 3900

cataatatag gcagaaatga caacatctac ttaaacctcg tgtctcatgg gattgatcat 3960

ggcttaccat ctagcagggt agtagctcac aggggtgttg taagctttta cactgattta 4020

tgtgaaatac tttgaaggat tctggcacat agcaagttct cagtaaatgt cagtggggag 4080

agaaaagata gaacagtcag gagcatccct ggcacgacta atctagagtg tgttaacagc 4140

ggcagaaact cagtacacat tgtggatgga gtaggggggt ggggggtgct gcagtttgtc 4200

ctttgcacta caccccgcca cgtggtggac catgatcaat cccatgaaac acgagggttt 4260

aagtagatgt tgtcattcct ggctttaaaa tgcatgctgg ccttatgttt ctcttggacc 4320

cctttctgct accctaattt ctcattctgg ctccaactct cccatcttct gtgatgttat 4380

atttaaattt taaattataa tttgttgcag ggtacttgga tatcatgagt gatttaaaga 4440

tggtattact ctaaatccac agaatatttt taacttcata aaaactgttt cgggccaggc 4500

acagtggctc acgcctgtac tcccagcact atgggaggcc aaggcgggtg gatgacctga 4560

ggtcaggagt ttgaaatcag cctggtcaac atggtgaaac cccgtcgcta ctgaaaaata 4620

caaaaattag ctgggtgtgg tggcacatgc ctgtaatccc agctgctcag gaggctgagg 4680

cacgagaatt gcttgaacct gggaggcgga ggttgcagta agctgagttg gcaccaccgc 4740

actctagcct gggtgataga gcgagactct gtctcaaaaa aaaaaagttt cagaatacct 4800

ttcatgaaac tcagtttgcc ttttggatcc tcttcctcaa caccagtccc 4850

<210> 428

<211> 3548

<212> DNA

<213> Homo sapiens

<400> 428

tttctcacta tcggcatcac tgccatcttg atccaaatca ctcttaatca ctcacctgga 60

ctatcatagt aaattcctga ttcatctctc tgtttctatt ctggctcctc ccaacccttt 120

gtcctaacct caaaaaagta acaaaagtca ttaaaaaaat aaaagtcaga ttatgttact 180

cctacactca aaaccttcta atggcttcct aaatcatttg caatgtaagt caaaatacaa 240

ttgtctagaa ggccctatgt catctggtcc ctgtgaaaac tctgacaaat tctttctttc 300

tggtttactc tatcccagcc acgacggggc ctctattttg ttcctgaaca ctctaagcat 360

gcccaatttt aggcctttgc acttgccgct ccctcaggtt gaaacagttt tcccccagcc 420

catatggctg tccttctcat ttccttccac actcaaatat tatcctatta gtgagtcctt 480

ccctgaccat tataggtcaa atagccaccc ccacccttgc agcttttcct gttttttcttc　540

tactgtgttg tattttttcta cacatagctt acatctctct gacccatcat tcatttatttt　600

gttaaaagtt cattgtcttc tcatactata tgtaaatact gtgagtatag agatttatgt　660

attttgttca ctgctacagc tatggcttga aaagctgtct attttttctaa catttattatt　720

tcctgctttc attgttttca cctgttatgt ttatttggta aatctttctt acttttttgaa　780

aaatctttct gtaaaaatct ttgtctttta atatttgtct ctaatagaat cacatttgtt　840

attataactt attaaatgtt actaatttct gattttttata ctttctactt tattgacctt　900

tatgctttat atatttatac tttttttgata ttttcttttt tatatctttc ctatatagac　960

taaattttct ttgtttttttt tttccccagt gatttgaaca atatatatcc cgttcttggt　1020

tttagattat ggtcatcttt atatttttat aaattattgt taaatctact ttctctacat　1080

aatatgagtg agatgagagt cctagctttt tgccaagcta cagctactac tggtatgcag　1140

acattctggt ttgccttcca gaaaggaata tgctttagat aattgtcatg aggagtttttg　1200

tggacacaaa gaacagaaag aatcatcagt gtgggaaggg gaagtcttct aggatgaccc　1260

agtctgagac tgatcccagg ctccacctca aaatttcagt tctgagatct ttggaggaag　1320

gtgctgtacg tgggagtcac atttaccctt ttcaccagag tatctctggt tctcaagcgt　1380

ccaaatatag cacatgactg gggaaacctc ttcttgcttt ggcatgaagc atagcatagc　1440

accaaaattc aaagacgtga ggagtttaaa aagcagagtc aaatttttcaa gtgaaggatt　1500

catagcaaag tcgggtgata ataaacttgt atgtcattgt aggcactacc aaaaagggac　1560

cttagtgacg ggctacacta atgatggaga gtaacgagca gagctgaaga aggagctgtg　1620

gaactagcac agagcaactg aaaagaagtc tttgttagca tgcgtgacat agtttggggt　1680

gcctagaagt tattggagta gattctccca aaaggtagag gctttacact agtaggtgtg　1740

acagtgggaa ggtggcttac atagtcaaat ccaagaacca aattataact ttgcattccc　1800

ctgataaaaa gcaacaaaat taatatgctt ctgtttcccc ttcctcttct attcattatt　1860

ttccagtgta attgaaatta gatacatgaa ttttaattga tttttttttct tattcttaca　1920

ttaaatatct tgtttttcaa gaataatttt tgcccgtacg atttaatttt gtcatatttta　1980

ccacaatctt ttagaaaaat gtttgactgg tagtaatgtt atctggaatt cttttatact　2040

atgttttctt catttctgtc tttctatttt ctacttattt cttccaaaat atatctttgt　2100

ggaagactcc atggtgtgtg tatatttttta gcctttgaat atctgattat ttcctcccat　2160

tgttttttaga tagacaaaag acttgactag ggtgtctcca gctttttactc tcacctgaac　2220

```
tccagaatcc tatggctatc tatggtcatc tccactgaat gtttaaaaga tatctctgtt 2280

aatatgttat ataaggtaat tgtgtaacat attaacagag atatctttta aaaattgaaa 2340

tttcagagaa aagatgaaag agagagaaat gcataataat ggcattttga ttattcaggg 2400

aaatatactt gttcttagga tatatgtgat gaagtattag gtgttgtagc aactatgaaa 2460

atgtactgct cagatctcct gtagacagga gcagaattga ctgccgtgtt ggctatattt 2520

catgtacttc cctgttcaag ccaaggtacc cttcatgctg cttcccgtca gtggctgtgc 2580

acagtaggtg tactaatgca ggcccatgtc ctcaagaagt gggaccccat aacagatga 2640

ctttggctca agacttccca ttggcctggc caaaacttac ttagaaatgt gctgcgttct 2700

gaaatttttc tccctaatct cttcttctct ctgttcttca taggagtctc aagtatctct 2760

cagccttctt ctgctgcccc aaccatttgt ttctcacagc tcacacaata tatctcttgt 2820

aagcccaact tatactggca tctaattcac agagggtctg aactaacagg gttacatgct 2880

atgatgtcca agtagttaag gagaaaagtg tacgtgtttg tgtgtgtgtg tgtgtgtgtg 2940

tgtgtgtgtg tgtgtcagag agagagagag agagatgaga gagagaaaag aataaaagga 3000

aggaagtaaa tatctcaaaa tattaataat tgatacattt aggagaatac tatgtgtact 3060

cattgcatta ttctgtttta gatttgaaag tttttaagta aaatgtggct gctaaaaaat 3120

aaaaatctaa aaattacaaa aaaagataca tgaagctcaa catgtgtatt gatgagacat 3180

ctatttccaa tttcaatgtc tattctcctc agcaacaaat ccctgatttt atttggggca 3240

cattgcatcc agcctagaat tttatttcaa ttaaaacatc atctgactct tacattcaag 3300

caatggaaat acaagtaaac atgttatatg ggactgtggg aagtcttcct aaaaggtagg 3360

aggtctttcc ttttcaccct ctcctatagg gcttcctgaa ctatgtatgt gattgctaga 3420

gctcaagcag ccatctttga acatgaggca gtgcatcaga aagagcagag cagcaagaaa 3480

gaaggcatct cagttcctaa cgaatgaagt caccacatca gccatagaag cctgcctcta 3540

ggactctg                                                            3548
```

<210> 429

<211> 3748

<212> DNA

<213> Homo sapiens

<400> 429

ttgtattttt	agtagagacg	ggctttctcc	gtgttggtca	ggctggtctt	gaactcccga	60
cctcaggtga	tctgccggcc	tcggcctccc	aaggtgctgg	gattggaggc	gtgagccacc	120
gcacccggtc	tgtgatcctt	atcgttcact	ttgagctctc	tgagaagagt	agggccctat	180
tttatctgca	gggctttctt	tcctcagttc	ctcagtttct	ttcctcagtt	ccagtatcat	240
gaacaggatg	ctcagttact	gagtatcctg	agcagatact	gagtaaatgc	ttgagtgatg	300
ttgataaagt	catataccta	gaattaccca	ctttaacagg	aactttgtaa	gattcctctg	360
ctttcattaa	aagaaaaaaa	aacaaaactt	gtaaattacc	aaagacaaag	tacttaacag	420
aacacatgtg	tatcttcctt	tttttttttg	agatggagtg	tcgctctgtc	gcccaggctg	480
gagtgcagtg	gcgagatctc	agctcactgc	aacctctgcc	tcctgggttc	aggcgattct	540
cctgcctcag	cctcctgagt	aggtgggatt	acgcccggcc	acatgtatat	tttttctgga	600
actaccttat	tcaatcattc	agtaagtaaa	cattgcactc	cagcctgggt	gacagagtga	660
gatttcgtct	caaaaaaaaa	aaaaaaagaa	agaaggaaat	ccttcagaaa	ttctttatct	720
gagtgctgtg	acgtccatag	tgaaatttat	tacttggaaa	ctacatagtg	gttgtgagag	780
gaaataagta	ataaatatta	aatggtatta	aaaagattat	gcaactggga	aagaaaaatt	840
aatttgctat	cgctaccatg	attcaccatc	acatctagct	gtcttctaca	gccttttatt	900
tatttatttt	tttttgagac	ggagtctcag	tggcgtgatc	ctggttcact	gcaacctctg	960
ggccccccccc	aacccactgc	gagttcaagc	aattctgcct	cagcctccca	agtagctggg	1020
actacaggta	ttttatgcat	ggggtttgta	aggaaggaga	caactgtcgc	tactcgcatg	1080
acctctctga	cagtccgtat	agtgtagtgt	gcaagtattt	tcagcgaggg	tactgtattt	1140
atggagaccg	ctgcagatat	gaacatagca	aaccattgaa	acaggaagaa	gcaactgcta	1200
cagagctaac	tacaaagtca	tcccttgctg	cttcctcaag	tctctcatcg	atagttggac	1260
cacttgttga	aatgaataca	ggcgaagctg	agtcaagaaa	ttcaaacttt	gcaactgtag	1320
gagcaggttc	agaggactgg	gtgaatgcta	ttgagtttgt	tcctgggcaa	ccctactgtg	1380
gccgtactgc	gccttcctgc	actgaagcac	ccctgcaggg	ctcagtgacc	gaggaagaat	1440
cagagaaaga	gcaaaccgcc	gtggagacaa	agaagcagct	gtgcccctat	gctgcagtgg	1500
gagagtgccg	atacggggag	aactgtgtgt	atctccacgg	agattcttgt	gacatgtgtg	1560
ggctgcagct	cctgcatcca	atggatgctg	cccagagatc	gcagcatatc	aaatcgtgca	1620

```
ttgaggccca tgagaaggac atggagctct catttgccgt gcagcgcagc aaggacatgg 1680

tgtgtggtat ctgcatggag gtggtctatg agaaagccaa ccccagtgag cgccgcttcg 1740

ggatcctctc caactgcaac cacacctact gtctcaagtg cattcgcaag tggaggagtg 1800

ctaagcaatt tgagagcaag atcataaagt cctgcccaga atgccggatc acatctaact 1860

ttgtcattcc aagtgagtac tgggtggagg agaaagaaga gaagcagaaa ctcattctga 1920

aatacaagga ggcaatgagc aacaaggcgt gcaggtattt tgatgaagga cgtgggagct 1980

gcccatttgg agggaactgt ttttacaagc atgcgtaccc tgatggccgt agagaggagc 2040

cacagagaca gaaagtggga acatcaagca gataccgggc ccaacgaagg aaccacttct 2100

gggaactcat tgaggaaaga gagaacagca acccctttga caacgatgaa gaagaggttg 2160

tcacctttga gctgggcgag atgttgctta tgcttttggc tgcaggtggg gacgacgaac 2220

taacagactc tgaagatgag tgggacttgt ttcatgatga gctggaagat ttttatgact 2280

tggatctata gcaaccttgc gtggcgtgtg aactggtctg ctgacctcag acagcagctg 2340

tcccctgtgg tggtgtggca gtgcctgtgt tctctcctag gcaggcctct caactccagg 2400

tgctgtccta agaattttta cccagggcct gtcttctcaa cccctcacct ttccctgagg 2460

agtgtgttgt tttccctgtt gaaaaaagtt acaaaaataa atcttaaagt tagttttttg 2520

taacacgaat ttaactgtca gacagttagt gtaggtgtgt tgcgtcatct gttttcaacc 2580

agattgcatt tatggacttt tcacacactc attttgagga ccccaggttc aaaagtaaaa 2640

gcagtggccc tgctttgggg tccaagaata ggagtgatgg gtgaagggac ctaagctggc 2700

caatagccct ctgccccaga catgggatgt ggatccttga ggtttctggt gaaatctgca 2760

catctgtgtt tttatatctg ttccctaccc tgtaatccct accacgtgca cttgttctgt 2820

ggttttggtc tcttgtttaa ttgcacacaa gtaatactac tgggtaacca gaatcaggtg 2880

tgaatgtgtt gagattttt actgttttgc atgataggaa aattgagaaa gaatacgtat 2940

aaaagataga gaggcataac atcaatgcag agttggaagt tggctcccaa gggctgacat 3000

ggtgtgagtg tgtgggtgtg tgataagctt ctcatccctg catagatgca gtattcttag 3060

ccttagtaga aaaacctggt ttagtggttt aagccttgtg tggcagatag atcttaaagg 3120

gcaaagcagt atattggtag ttgtcaatat agcagtgcta gctctgtcta tataaataga 3180

gaaatggggt tagccataga ggttaaaact acctggttat cccatataat aacacaaact 3240

gggtcttgga tacacagttg tatttaatgt tttacgatct agcctttcca gtacaggcac 3300

tttctgagaa acctttgtcc tcacttgagg cattttgttg tcgggttttt gtgtttgttt 3360
```

ttgtgggtat ttgcctcatt ccaccccctga gctttcaggt agacagacgt gattcaaaac   3420

tctgttctaa ggtgtttatt gtagtggagt aatgggtttg cagtgataag tcatactttt   3480

ccaccgaaag ggagggcttg ggaatccctg agattagcta aagttaagtt gttggaagaa   3540

ttccttgatt ggaaattgta cctttgtgtt ttgttgctct gtttcctgaa aataactcgg   3600

ggatgctcct ggtttgtcca tctactgctt tgattccttg gatcccaccc attctttcac   3660

tttaagaaaa aacaaataat tgttgcagag gtctctgtat tttgcagctg ccctttttgta   3720

agaagcactt ttcccaaata aaacaatt   3748

<210> 430

<211> 3834

<212> DNA

<213> Homo sapiens

<400> 430

ttttggcact tcaaagatgt ttcagtgtct tccagcccccc tcgtttctga tgagaagtta   60

gcagccattc caggcttttc cttctgtgtc tggcactggt gggttcttgg tctcattgac   120

ttcaagaatg aagccgtgga cccttgcggt gagtgttaca atttttaaaa atggtgtgtc   180

cggagtttgt tccttcttat gttccgacat gttcagagtt tgttccttct ggtgggttcg   240

tggtgtcgct ggcttcaggt gtgaagctac aaaccttggc ggtcagtgtt acagctccta   300

aagctgcaca tctggagttg ttcgtccctc ccggtgggtt cctggtctcg ctggtctcag   360

aaatgaagct gcacaccttc acagggagtg ttacaggtca caaaggtagc acagacccaa   420

agagtgagca gcagcaaaat ttatggcaaa gagggaaaga agaaggcttc cacagcatgg   480

aagggaaccc cagcaggtct gccgttgctg gctcgggtgg cctgcgttta ttcccttatc   540

tggccccacc cgcatcctgc tgattggtcc attttacaga gagctgatta gtccatttta   600

cagagagctg attggtccat tttgacagag cactgattgg tgcatttaca aacctttagt   660

tagacacaga gcactgattg gtgcatttac aatcctttag ctagacacaa aaagttctcc   720

aagtccccta ccctattagc tagacacaga gtgctgattg gtgtgtttac aaacctttag   780

ctagacacag agtgctgatt ggtgtattta caaacccttta gctagacaca gagtgctgat   840

tggtgtattt acaaaccttt agctagacac agagtgctga ttggtacatt tacaaacctt 900

tagctagaca caaaagttct tcaggtcccc acccaaccca gaagcccagc cgacttcacc 960

tctcaatggc actcacctca ggactttgca gcacctagcc cgtgcactcc agcatcccag 1020

agggagcttg tccccgatca agcctagcag gtgccggccg ccgcccgcg gagcccacgc 1080

ccaaccggaa cccgcgccgt ccagcgagta ccgctcgcgg ccccggctcc cacctgtgcc 1140

tctacctcca catctccccg ccaacagagg gagccggctc cgcctcgacc agccccagag 1200

aggggccccc acagcgcagc ggcaggctga agggctcctc gaacgccgag gccgaggagg 1260

cgccgagagc gagggctgct agcgagttgt cacctctcac ttccatgtgt gataaactgc 1320

tttcctcttg ctgctgctgg gagacaattt tccacgattc tccgtttcct cacatctagg 1380

cattaacagc aaatttcctc agatatatta cattccagga tagtaaaaat aaaagaaggt 1440

ttttttttt ttgagacagg gtctccctct gttgcccagg ctggagtgca gtggcgccgt 1500

ctcggctcgc tgcaacctcc gcctcctggg ttcatgtgat tctaccacct cggcctcctg 1560

agtagctgag attgcaggcg catgccacca tagcctggct aattttgta ttttaggag 1620

agatggattt tcaccatatt ggtccggctg gtcttgaact cccgacctca ggtgattcgt 1680

ctgccttggc ctcccaaagt gttgggatca caggcatgag gcaccgtgcc tggccagagt 1740

ttccactcat tctccgcaga aaggtccatt cccgtaggta cttactctgc cacacagaac 1800

cagaacctcc atgagtctct gctagtggcg ttcactgttt ttttccttcc ttgtaattta 1860

tttattttta aaaaactggg tgccttcgtc ctgtaggggt tccacctttg tgtattttgc 1920

tgttgcatcc ccattatgtc attttatttt aaaaatattt caccatattt gcttcaggtt 1980

tctctttta aagaaaatct tatcaacagt cctgtgtttg ttccttttgt gtgtttacag 2040

tgagtggatg ttctataatg tatctatcag cctgctacta attgtttcca tcttttgttc 2100

ttgtaaacaa tagcaggtga aattgacctg gaatctcttc ctttgtgcaa actgtaacca 2160

attacaaatt gccctccaag aatgtatgct aatttaccct ggcagggtcc ttcctcccca 2220

aagattttg ctatataatt atttttaaa gtatgtgtat tcgtttccaa ggactgccat 2280

aacaaattac cacaaatgga gtatcttgaa acaatataat ctggccaggc gtggtgttgt 2340

gcgcctgtga tcccagctac tcgggaggcc gaggcatgag aatcatgtga acctgggagg 2400

tggaggttgc agtgagctga gatggcgcca ctgcattccg gcctgggtga cagagtgaaa 2460

ctctgtctca aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaga gagagagaga 2520

aagaaaagaa aagacaatat aaatctcagt tctgaaaact ggaagcctga aatcgaagtg 2580

tcccagggtt ggtttctctc cccagttctg gaggctgcca tgccccttgg tgtccctggc　2640

ttgtaggtag ctctcaccct gtctctgcct ccatcctcat atggcattct cctttgtctg　2700

tctctgtgtc tctagggctg ttttctcctc cagcaagggc tgttttctta ttctatccaa　2760

gctgtttctg ctgagatggt tggttggatc ccagtgttgc aggtctcatc tctccaacaa　2820

gggtttggcc accacatctt tggtggttta ttttattttt aaaaattcct attttggctg　2880

ggtgcagtga ctcatgcctg taatcccagc actttgggag gccgaggcag gcagattgct　2940

tgaggccagg agttcaagac cagcctgggc aacctgacga aaccctgtct ctacaaaaaa　3000

cacaaaaact agccagaata tggtcgtcta tacctgtagt cccagctacc tgggaggctg　3060

aggtgggagg atctcttgag tatggggggt tggaagctgc agtgagccag gattgtgcca　3120

ctgcactcca gtttgggtga cagagcgaaa ccctgcctca aaaaataaat atttcttatt　3180

tatttgtggg agggaatcaa tcagaagtac tttccattgt tcatcttcaa ggcagtgcaa　3240

agggagtagc ctttgatcct tttgttactt tgctgtggag agattttcct tttgattcag　3300

ttctaggaag tcagtgctaa ttgcctttag gttccttgcc tccagaccct attctcgcgc　3360

ctcactagta cccatcgtgt acttttaaag ttcctgcaac tcaataataa aaccccaata　3420

actaaattta aaaatgggta aaagattccc atggatgaac ctggaggata cgttatgtga　3480

aaaacgtgag gtactgaaag ataaatactg catagtctca cttatgtgtg gaatctaaaa　3540

aaggtcgaac ttggccaggt gcagtggctc atgcctgtaa tcctagcact ttgggaggct　3600

gaggcaaggg gatcacttga ggccaggagt tagaaaccag cctggccaat atggcaaaac　3660

ccccatctct actaaaaatg caaaaattag ccagtgtggt ggcatgtgcc tgtagtccca　3720

gttgctcagg aggctgaagt gggaggattg cttgagcctg ggaggttgag gctgcagtga　3780

acagagataa ggccactaca ctcctgcctg ggcgataggg tgagaccctg tctc　3834

<210> 431

<211> 5650

<212> DNA

<213> Homo sapiens

<400> 431

```
tgcctgctct tccctgattt acccacaacc ctaactttgc atattcaaag ggggagatcc    60

tggtaagtac atgcttagtg tggtagcaaa cattagagaa tctagtggtg atggagaccc   120

cgcccacccc taatattccc tgttccccat cccctccaaa taacaaaaat actaaaaatc   180

gagctaacct ggaaacccca tgccgcagcc ggcgctggac tgcacgttgc cctgggtata   240

agtcgactca cacaggcact aactggaccg ccacccttga aggcgcactt ctgcagccag   300

ttcctggcag gttttcctgg tttcctgtag gtcagggatg gcaaatactt acacaccgcc   360

cctgcctccc ctcacatccc tggctgtgga agatctcgct taagccagac cagaattcat   420

tcttggcact gcccctcctc cttctatctc ctatgcagat gtcactcatg gatcagagca   480

tatttttcca catggcagaa atcttgccct cttgtgccca tggcagacat ggctagttga   540

tctagcactc tttgccttgt gccgctcctc tagcacacgc ccatggcaga tattgctaag   600

caatcctagc attctttcca ataagcttg ccagcactcc tgttctgtag cagatgtggc   660

taagtgatta aggtattgtt tttctcccta tatgataccc tcttctctat gcatggcagg   720

catgactagt caatcaggag cctctttcct agatgctgcc tcttgtcctc cagataaatt   780

gatgaggctc ttctgttcca cttacccttt ctcctatcct tggcctgtga caggcaacac   840

taattgatcc tagcaccgtt tcctgccacg cccagaattc tcaccacagt gcttcaggta   900

tcttgtacca gtcgattgac gtggctcccg agatgaatca tatttgctgt ccatccctgc   960

tgtgggtaac acctccttcc tttgtgcaga accctcagct ggggcccagt gtggggcgtg  1020

agatgggcgt gaggcccagt ccagcccagc ccagcgggaa gcagcctgct actcatagct  1080

gagaactgaa cccagctcaa ggagctcacc tctaggcagc cggcctcagc ccggctctta  1140

cacttggaca gcacagcctg ggcctccagt cctagcaggg gctccctttt gctggacatt  1200

ctcccactgc cagccaccaa ggcgctggtc atccctgcca ctgccctctg gcggggctct  1260

tctggcaatc ccagggtctt tcttgtagct gagccgatcc tatgccaggg cctcgctgct  1320

cccagggcct gggtgtgcag atagggccat gggtggggca gtgacgggag gaattagttg  1380

gcctcgggct tgtggttttc aggttcctca tgtgttcccc ccagtccctt tgaatttgcc  1440

aggccaagac caggaacctg cttctccctt gtacccaag aggtttaggg gttcctcttt  1500

tcctaccaga ggccacatag cccagccccg tcatgagcgt ggccgtggcc tctgggtctc  1560

ccatctgtgg ttcccatctc tactcgggag actcaggccg ggaccctcac ccaggaaaga  1620

gactggagca gcctgccaga ggatccctgc tttgccgccc cctgcctgcc ctgccacccca  1680

taccgcccca tgtgcctgcc tgcctgtcac tgtgcaccct agcccgcaac ggcctgccgc  1740
```

ctcttctgtc tctcccaccc ctacttcctt ctaagcccag tcccattggg atgtgtccct 1800

tggatgcaaa cctgactttc tgctgaggcc tggctgctcc ctttctctgg ctcacaagtg 1860

gtggatggct aacgggcctt tgtttgccac ccacagcttg cagctcccta gggtgggatt 1920

ttgtctctga acccgtgtgg agaagggcac ctcagggctt ctgccagacg tcctgcccca 1980

aggcttggtg tgccatcccc agcatggccc cgatcagtgc cctggccctg tggccatgca 2040

ccccaaagtg tagcgtgggc cctgtgctcc agctctgacc aacactaacc ccggctggag 2100

gcaggagagc caggccaccg aggggtgtgc gggcacatcc ctctccttag aaaccgggcc 2160

aggcctggga gtatggaggc ctcacatttc tctgggggag caccgacagc ctgtctccct 2220

gttttccctc acctggttgt cattcagtca tggaaccagg gtctactaag cactcgttct 2280

gtgcccagct ctgggctgag acaaggcagt gcccccaccc cgctccccccc gggtgaatgg 2340

aggcattccc agactgccag acctttggtg ctaacaccag gacgtcctgg acagaccagg 2400

aagagctcgt cactgcgttc ccagagggga tgctgtgacc tcacaggggc tgctggcctc 2460

agcccctca cccaccacca ggcagcccgt gaatggccag atgccagggg tcactgcctg 2520

ctccaaacaa ctgtaagagt cctgtctgct catcccaggg agggataagt ctgtacccct 2580

ggccttaaca aggggcgccc ggtggcatct catgctgtcc ccagcctggg cagtgacttc 2640

tgcatggtcc aggggtccct gggtactctt tagccacctc cgtcttcatg gccacctggg 2700

gcctagcact cacatccagc caccaaggag ccgctggagc tgtgggctgg tggccctggt 2760

tcagaatgtc aggcccgggg tgggtcgggg tagtccggat gaagcccctc cataggaccg 2820

cccccgacta ggacagcatc tgggccccag agggattcct ggaggcccca tctctggcgc 2880

tcctgccgtg ccgtgccctg ccatgccctg cactgggggga tgcaggccag cccttcgcag 2940

ctgtccatgg ccatgctcag cccacccttt gtagcttggc caagtctgtc agtgcctggg 3000

tcccaggccg ccctgtgcgt gcctccgtgt gcttcctgca gctcccaggg ccctcgtcct 3060

gagtggggtg gggggctctg cccacacatg cctccagcgg ccagggagca tgggagcaca 3120

gcccccaggc tgcctgccgt tagttgtcag gtgagtccct gcgcaggcct gggttctgac 3180

ccccacgcag atgacagcta cagccacaca atccccatcc atggggtctc ccagcctgaa 3240

accctgatgt gtcagtcaaa aggatgacca ccaggcttgc agccagcttg ggacatgagc 3300

cgcgctcctt caatgtcctt ggggagggcc cctgggctca cacctttgac cctagccctc 3360

tgtgtggatg ctacccttgg aaccttatct cacgcaaaca agtgcagttc ctcagatgtc 3420

acatttcatg tgccacagcc ccacacacaa gccccaggga ctcctcccat gggccccttt 3480

ccatcaggcc tctgtgagtc tataccccat cagcccctgg cccagtgagt ctgtctgtcc   3540

gcccacctgc ccaggtggcg cctcatgttg gtttcctgct ggaaatgctt gggacagggt   3600

ggaactgggt ttcctgggct ttggggctgg aggtgtttct attgcggtcc ctggcttccc   3660

actgagctgt gggcaaggct gctgcgctgg gggatggctg gggcacggag cgaggttccc   3720

tgctaagctg cgcgctttcc cccaggtgat ccgcaggggc tggctgacca tcaacaacat   3780

cagcctgatg aaaggcggct ccaaggagta ctggtttgtg ctgactgccg agtcactgtc   3840

ctggtacaag gatgaggagg agaaagagaa gaagtacatg ctgcctctgg acaacctcaa   3900

gatccgtgat gtggagaagg cttcatgtc caacaagcac gtcttcgcca tcttcaacac   3960

ggagcagaga aacgtctaca aggacctgcg gcagatcgag ctggcctgtg actcccagga   4020

agacgtggac agctggaagg cctcgttcct ccgagctggc gtctaccccg agaaggacca   4080

ggcagaaaac gaggatgggg cccaggagaa caccttctcc atggaccccc aactggagcg   4140

gcaggtggag accattcgca acctggtgga ctcatacgtg gccaccatca caagtccat   4200

ccgcgacctc atgccaaaga ccatcatgca cctcatgatc aacaatacga aggccttcat   4260

ccaccacgag ctgctggcct acctatactc ctcggcagac cagagcagcc tcatggagga   4320

gtcggctgac caggcacagc ggcgggacga catgctgcgc atgtaccatg ccctcaagga   4380

ggcgctcaac atcatcggtg acatcagcac cagcactgtg tccacgcctg tacccccgcc   4440

tgtcgatgac acctggctcc agagcgccag cagccgcagc cccactccac agcgccgacc   4500

ggtgtccagc atacaccccc ctggccggcc cccagcagtg aggggcccca ctccagggcc   4560

cccctgattc ctgttcccgt gggggcagca gcctccttct cggcgccccc aatcccatcc   4620

cggcctggac cccagagcgt gtttgccaac agtgacctct tcccagcccc gcctcagatc   4680

ccatctcggc cagtttggat cccccccaggg attcccccag gagtgcccag cagaagaccc   4740

cctgctgcgc ccagccggcc caccattatc cgcccagccg agccatccct gctcgactag   4800

gcctcgaggg gggcgtgctc tcggggggggc ctcacgcacc cgcggcgcag gagcttcagt   4860

ggtctggggc cctccgccgc ccctatgctg ggaccaggct cccagtgggc agccctggcc   4920

tcttccttaa cgctggcccc ggtccagggc cggcccctgt gcctggctgg acaccgcact   4980

gcgcaaaggg gccctggagc tccaggcagg gggcgctggg gtgttgcact ttgggggatg   5040

gagtctcagg gtggcagagg ggggaccaga acccttgaca ccatcctgaa tgaggggtcc   5100

agcctggggg ggactctacc aaggtcttct tgggctggga aagcccatgt agggcaggcc   5160

ttctataagt gcgggcacca agggcgccta catccccagg ccttgctggg gtgcagggt   5220

atatcaactt cccattagca ggagctcccc agcggcaagc ctggcccagt gggctcggta   5280

gtgcccagct ggcaggcctg aggtgtacat agtccttccc ggccatatta accacacagc   5340

ctgagcctgg cccagcctcg gctgccagag gtgcctttgc taggcccgga gccgttggcc   5400

cgggccggcc ttgccctatt cctctcctcc tcctcctcct gggtccccca gggtggctgg   5460

gcttgggcta tgtgggtggt ggtggcgggg ggtcctgggg gcctctcagc tcccgcccat   5520

gcctccctga tgggtgggcc cagggcggcc tctctctgag gagacctcac ccactcctcg   5580

ctcagtttga ccactgtaag tgcctgcact ctgtattcta ttaataaact aaaataaagg   5640

gaagacgctg   5650

<210> 432

<211> 3383

<212> DNA

<213> Homo sapiens

<400> 432

aaaaaaccct cagggacctg gtatagacgc agaatctgtt tcacacaaca actgctattt   60

gaaggaaaaa aaaaaaaaga agcaaatggt accaagacaa gctcataaca gagatccaat   120

cagcagatgt gtacggatga aaatacagtg agatgagtca gaaaccggcc aaggagggtc   180

ccagactctc caaaaaccag aagtactccg aacacttcag catacactgc tgcccgccgt   240

tcaccttcct caattccaag aaggagatag aggatcggaa atacagcatc tgtaagagcg   300

gctgcttcta ccagaagaaa gaggaggact ggatctgctg cgcctgccag aagaccagct   360

cctgccagcg tcgcttaagc agcagaggag agccctggct cccgcctcca gcttcttttg   420

gccctctcag aaccagccgc cgtgccaagt cccctcagag gcccaagcaa cagccagctg   480

cgccccccgc ggtggtcaga gcgccagcca agccacggtc ccctccgagg tctgagcgtc   540

agccacggtc ccctccgagg tctgagcgtc agccacggtc ccctccgagg tctgagcgtc   600

agccacggtc ccctccgagg tctgagcgtc agccacgtcc ccgcccagag gtccgaccac   660

cgccagccaa gcagcgtccc cctcagaagt ccaagcaaca gccgcgcagc agcccccctca   720

gagggccagg cgccagccgt gggggggtccc ccgtcaaagc ttctaggttc tgattgaaaa   780

ggaagatcag gccaacccca aagaagaagt gaccaaggag gagtttaaac tgaatgaaca　　840

acctcggctc ctggactcat tgcttcacaa cccatctacc cctggatgaa gttatctggc　　900

ttcaaatatt atgcaggggc aaacacctgc tgatgtggca actgctgatg ctcatggtcc　　960

ccatggcatg ggggcctcag ggcagcctgc ctggaggtga gcagggctat ctctgtgtgt　 1020

tgtactccag tcaggggggtt ccagcagcac ccgcaggctc tagagctcaa tgcacagttc　 1080

tttttgtttc acctgcagtc ctttcttctc caggatatgc acaggcctcc agggtctttc　 1140

atggctcagg gtcagggtgg ctcaagtgcc aacccacatg ttgtcctcca aatattccct　 1200

tctatccctg gcatgctgtt gctgagctca actttttaatt tttgactttc tcctttgtaa　 1260

ttaatctcta tctgagtttc tctctttctc tgtgccattt ggtttcctta attagttccc　 1320

tgtgccagcc catagtcaga gccataattg gctctgggga agatccaagt tattttctga　 1380

gtaagatatt aggcttccat atgatccaga gatgcaaaga aatccctaga gagtgtagga　 1440

gttgtctaaa tccatgtgtc agatgtagcc aacgaattat gtcagaagca gagagaaaag　 1500

gcctgaaaag cagctctctc ccactcctca ggcccttgtc tccaacctta catgaggctt　 1560

tttgaacatc tcctcctggc ccagctgggg tgagagcaag tcctcgaagg cactgccttt　 1620

gagccttgct cagcccatct gaactatccc aactctagaa ttgactgctt tcgaattgtg　 1680

tgaccttggg aatgttatct ggcttcaacc acaatgccct accccagct cctctcccaa　 1740

atgatcctag atacagggct gcttcccccc gaccctaccc cacctcggga cacaggctca　 1800

tggcctcatg gcacttcacc accagaagtg gtgctcagag ttcctatttc cacatctaac　 1860

cccctaattc ctgggaaagt ctgaggcctg gtccccccag tgctttccct ggctggcctc　 1920

tccacatttt catctgatgg tggagtgaga tcaggaaaaa taggacagga gctttgcctt　 1980

gggggagaag agagttaagt gtggaaaggg gtgagttata ggaggttaag cagtccaaga　 2040

tttctctctc tgtgtaggag gccatttcct gatgtgaggg gtctgaaccc aattatgatg　 2100

ggacagggtt gggcattgac ttcccatctc ttctctctgt ttttctccca ctatctgtag　 2160

cccaaaactc ttatggagga ctttgatctt tagtataggc tattggtcag ggccatagga　 2220

actaaccccg atcctcactc caccaggatc taccacatcc cctacacaca aacacatgct　 2280

gtggggaggg agttttcccc tgggtcaagt tgaggatcct tagatcacct tgtgctcctg　 2340

tggactggtg tgtgcgtgtg tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tgtgtgtatg　 2400

ttgggaaact tagctttcag agaatgtcta tgggctctca ttttctctct cacacaaaaa　 2460

tactcgggac ttctccaagt ccctgaggag cctgaccact gaagctgatc atgagatgac　 2520

tgtatgctga cacaccccct tcaggggcct ggccttgact tagggctgca ctgtatcctc   2580

agcaacggcc ttgcaggagc ccctttttgga ctgctttccc tattcagccc agagttggggg   2640

tggtgggaga agaggggttg gagtgaatcc atctctattc aaattccagc tgggattact   2700

ctaggagtct tcctggcttg ttttgggctc aaacttagct acattgttta ttggctccca   2760

aagtcgggat tgaagagtga aaagatgcag gcaatgaatc cttctgcaca ctcctcccca   2820

acctttccag cgcttttcta cttaggaggc cagtggaagg gaggagaggt catgccctag   2880

cccacagggg acaaggttca ttgttcttcc aggcttggtt cactctgctt ttgattcaga   2940

agctctttcc ctacccagca agactacact ttcttgcctt ctttctattt tttctttttg   3000

tgcgtataaa tggtatgttg tgatatattc tcagtgcttg tgcccacctt ggaactctgt   3060

tcttgctctt cattccgcat gtgatactct ggtccaagat cttggccagg tgccttctgc   3120

tcaaatatcg tctcagaggt gcttcccttg aaaactcggt gctgtttcca tagttactct   3180

atttgatcac tctaagtttg gttgtcttca tagcacttgt caccctctgg aactattcta   3240

tccatttatt tacttgttta atgcttggct cttttcccct cctaacgtaa actccatgat   3300

tgccaacacc tgtttactta ctacagttcc ccctcccccc acattcctga cactagtaag   3360

aaccaataaa cacttgttga cgg   3383

<210> 433

<211> 3952

<212> DNA

<213> Homo sapiens

<400> 433

gtgtgagcgg ccccgatgtg gcaggaggcg atgcggcgcc gccgctacct gcgggaccgc   60

tccgaggagg cggcgggcgg cggagacggg ctgccgcggt cccgggactg gctctacgag   120

tcctactact gcatgagcca gcagcacccg ctcatcgtct tcctgctgct catcgtcatg   180

ggctcctgcc tcgccctgct cgccgtcttc ttcgcgctcg ggctggaagt tgaagaccat   240

gtggcgtttc taataacagt tccaactgcc ctggcgattt tctttgcgat atttatcctg   300

gtctgcatcg agtctgtgtt taagaagctg ctgcgcctct ctcgttggt gatatggata   360

tgccttgttg ccatgggata cctgttcatg tgttttggag gcaccgtctc tccctgggac　　420

caggtatcgt tcttcctctt catcatcttc gtggtgtaca ccatgctgcc cttcaacatg　　480

cgagacgcca tcattgccag cgtcctcacc tcctcctccc acaccatcgt gcttagcgtc　　540

tgcctgtctg caacaccggg aggcaaggag cacctggtct ggcagatcct ggccaatgtg　　600

atcattttca tctgtgggaa cctggcggga gcctaccata agcacctcat ggaactcgct　　660

cttcagcaaa catatcagga cacctgtaat tgcatcaagt cgcggatcaa gttggaattt　　720

gaaaaacgtc aacaggagcg gcttctgctc tccctgctgc cggcccacat cgccatggag　　780

atgaaagcgg agatcatcca gaggctgcag ggccccaagg cgggccagat ggagaacaca　　840

aataacttcc acaacctgta tgtgaagcgg catacaaacg tgagcatctt atacgctgac　　900

atcgttggct ttacccggct ggcaagtgac tgctccccgg gagaactagt ccacatgctg　　960

aatgagctct ttggaaagtt tgatcaaatt gcaaaggaga atgaatgcat gagaattaaa　　1020

attttaggag actgctacta ctgtgtatct ggactcccta tatctctccc taaccatgcc　　1080

aagaactgtg tgaaaatggg gctggacatg tgtgaagcca taaagaaagt gagggatgct　　1140

actggagttg atatcaacat gcgcgtgggc gtgcattctg gaatgtcct gtgtggcgtg　　1200

attggtctgc agaagtggca atatgatgtg tggtcacatg atgtgacctt ggccaaccac　　1260

atggaagctg gaggggtccc tggacgtgtt cacatttctt ctgtcaccct ggagcacttg　　1320

aatggcgctt ataaagtgga ggagggagat ggtgacatta gggacccata tttaaaacag　　1380

cacctggtga aaacctactt tgtgatcaac cccaagggag aacgacggag cccccagcat　　1440

ctcttcagac ctcgccacac ccttgatgga gccaaaatga gggcctcggt ccgcatgacc　　1500

cggtacttgg agtcctgggg ggcagccaag ccctttgcac acctacatca cagggacagc　　1560

atgaccacag agaacggcaa gatcagcacc acggatgtac ccatgggtca gcataatttt　　1620

caaaatcgca ccttaagaac caagtcacaa aagaagagat ttgaagaaga attgaatgaa　　1680

aggatgattc aagcaattga tgggattaat gcacagaagc aatggctcaa gtctgaagac　　1740

attcagagaa tctcactgct tttctataac aaagtactag aaaaagagta ccgggccacg　　1800

gcactgccag cgttcaagta ttatgtgact tgtgcctgtc tcatattctt ctgcatcttc　　1860

attgtgcaga ttctcgtgct gccaaaaacg tctgtcctgg gcatctcctt tggggctgcg　　1920

tttctcttgc tggccttcat cctcttcgtc tgctttgctg acagcttct gcaatgcagc　　1980

aaaaaagcct ctcccctgct catgtggctt ttgaagtcct cgggcatcat tgccaaccgc　　2040

ccctggccac ggatctctct cacgatcatc accacagcca tcatattaat gatggccgtg　　2100

```
ttcaacatgt ttttcctgag tgactcagag gaaacaatcc ctccaactgc caacacaaca  2160

aacacaagct tttcagcctc aaataatcag gtggcgattc tgcgtgcgca gaatttattt  2220

ttcctcccgt actttatcta cagctgcatt ctgggactga tatcctgttc cgtgttcctg  2280

cgggtaaact atgagctgaa gatgttgatc atgatggtgg ccttggtggg ctacaacacc  2340

atcctactcc acacccacgc ccacgtcctg ggcgactaca gccaggtctt atttgagaga  2400

ccaggcattt ggaaagacct gaagaccatg ggctctgtgt ctctctctat attcttcatc  2460

acactgcttg ttctgggtag acagaatgaa tattactgta ggttagactt cttatggaag  2520

aacaaattca aaaagagcg ggaggagata gagaccatgg agaacctgaa ccgcgtgctg  2580

ctggagaacg tgccttcccg cgcacgtggc tgagcacttc ctggccagga gcctgaagaa  2640

tgaggagcta taccaccagt cctatgactg cgtctgcgtc atgtttgcct ccattccgga  2700

tttcaaagaa ttttatacag aatccgacgt gaacaaggag ggcttggaat gccttcggct  2760

cctgaacgag atcatcgctg actttgatga tcttctttcc aagccaaaat tcagtggagt  2820

tgaaaagatt aagaccattg gcagcacata catggcagca acaggtctga gcgctgtgcc  2880

cagccaggag cactcccagg agcccgagcg gcagtacatg cacattggca ccatggtgga  2940

gtttgctttt gccctggtag ggaagctgga tgccatcaac aagcactcct tcaacgactt  3000

caaattgcga gtgggtatta accatggacc tgtgatagct ggtgtgattg gagctcagaa  3060

gccacaatat gatatctggg gcaacactgt caatgtggcc agtaggatgg acagcaccgg  3120

agtcctggac aaaatacagg ttaccgagga gacgagcctc gtcctgcaga ccctcggata  3180

cacgtgcacc tgtcgaggaa taatcaacgt gaaaggaaag ggggacctga agacgtactt  3240

tgtaaacaca gaaatgtcaa ggtccctttc ccagagcaac gtggcatcct gaagagtcac  3300

cttcattttg gcaagaagac tgtattttca ggaaggtatc acacactttc tgactgcaac  3360

ttctgtccct tgttttttgat gtgcgtgctg tctgtcctat ggagcctctg cagactcgtt  3420

ctcgtgaccc agtggcatac cgtttggtgt ctgatgtgtg cccagatcgt tctgccactt  3480

gcactgtgct tgctcctaag caaaagggaa aaggagcgcg cgtgatagaa gaaaagcact  3540

gggagaacta acagaggaga aaggtgaaac acacacacat tcttaaggca ataaaactag  3600

ggggtgtata ttatcttctg gtgcatgttc ttttctggaa aatatggtag ctcgccaacc  3660

gcatctgctc atctgatatt caaacacaca gtattcgtga ataagttgat tctgtccccc  3720

acgtggactc tgtgctcacc cattgtctca ttgccagtgg tgtccaaggg cccccgttgg  3780

gacccacggc tctcgtccct ctgctccgtg tgtctcatgc cagcagcacg tcgccatccg  3840
```

tcaccagaat tagtcctcac agcctaggac cagttttgta tcaaactcgt ctgatgtttt   3900

gatgccattt gtcttttgta aagttaattc attaaaagtt ttatgtactt tg   3952

<210> 434

<211> 5100

<212> DNA

<213> Homo sapiens

<400> 434

gaagaccaag ccggaggtct ggggctgcgc agagacctgc acacccgcag cgcggaaccg   60

ggggcgattc ctatctttct ttcatgcttc tttctttttc ttaaaaccaa accaaaccaa   120

accaaacccca aaactcccct gctcccaccg caacttggag gagcggtgga ccgatttgaa   180

ggaactgacg cagaggtttt attcacgaac cttgaagaag ttctgggcaa gtgactcaac   240

aggacccgcg gggcccgggg tagccccagc tcccggcgct ggttcagtct ggcagtgccc   300

tctggcagcc aacccgcagc tgcaggtagg ggtgctggac gcccctgat tttgttttgg   360

gaataataat gacactacct atagcctgga cccaggtggc ctcgctcggc gattgtcccc   420

accaggtttg attgctactg tggctcaggt cctctaaact gtagccaata tgatggatga   480

tgacactgaa ttaaggactg atggaaactc tttgttaaag gctgtgtggc tggggaggct   540

caggttgacc aggctgctct tggaaggggg agcttatatc aatgaaagca atgacaaagg   600

cgaaacagct ctcatggtgg cgtgcatcac caaacatgtg gaccagcaaa gcatcagcaa   660

gtccaagatg gtgaagtacc tgctggacaa cagggcagac cccaatatcc aagataagtc   720

tggcaagact gccctcatcc atgcctgtat cagaagagct gggggagaag tggtctcctt   780

attactggag aatggagcag accccagcct tgaagatcgc actggggctt cagctctggt   840

ttatgcaata aatgcagatg actaggatgc attgaagcat ctccttgatg cctgcaaagc   900

caaagggaag gaggtgatta ttataacaac agataaatcg tcttcaggca ccaaaaccac   960

caaacagtat cttaatgtcc ctccttcacc caaagtagaa gacaggcatt cacctccact   1020

gtgtgcgtct ccctctgaca tagagctgaa ggctctaggc ctggactccc cactcactga   1080

gaaggaagat gacttcttca gcctccaagc agggcatcca agcagttgta acacctccaa   1140

ggctgttaat gagcctgggt cacccaccag gaaagtcagt aatctcaaaa gggcccgttt 1200

gccccaactg aagaggctcc agtctgaacc ttggggcctg atagcgccct cggtgctggc 1260

agcctcgacg cgtcaggatg agacccatgg tgccagcaca gataacgagg tcatcaagag 1320

catcagtgat atatcctccc ctaaaagggg gcccctctcc agaaccaaca gtatcgatag 1380

caaagacccc accctctttc acacagtcac agagcaggtt ctgaagattc cagtctcttc 1440

agcaccggca tcctggaaag cagcctatga gaaaggtcag gctccccacc cacgtctggc 1500

caggagagga actctccctg ttgaccaaga gaaatgtggt atgggtccat caggaccctc 1560

tgctctcaaa gagcctgcat ccctcaaatg gctggaaaat gacctctatg acttagatat 1620

acagccaggg cctgaccctc ccaactccat ttcccttgaa tccggcaaag gacctttaga 1680

taaaaagaag ctcctcagaa ggcattctat gcaaattgaa caaatgaaac agctgtctga 1740

ttttgaagaa atcatgacct agaagcttta gaaaggctta aaatagtcaa tatagtttat 1800

ggaagggact atggatgaga ctgcttcctg atcattcctt aatgttgaac tgtggccact 1860

tcagaagata taaaagcagg atgctgcttc acttctgaga ataatccctg ggtttttata 1920

ggcctacttg aaaagagctc aggataattg ggttttgaag ataaattttt aaaaattctg 1980

caaaggaaga aagcctttgg aatttgaagg taacacagca agtacaatga tgtaagctgg 2040

ggacatcagt agttttctat cagacaaaca gaaaagaatt taaatcagga ggtagtattt 2100

ggagtatgtc atttgtaata aatctataaa gtgcctacat agaaaacgag gctttaacat 2160

ttgttagaat gtacaaaagc cccaaaccaa accctcagtg actaaatctg ggtgtctggg 2220

ttctatctga tggagtagaa gcagaattcc ccccatggaa gaggctctgg cctgtgggtc 2280

ctggctctga ctctgtcagg gcactgtaaa tcatggtgtg gttgaactcg ttcagtaatc 2340

cagtaatata ttttgttcac atactaattt gtatgtgctc tgagtaccca aatatcccat 2400

ctatgtggcc cctgaattat gatatgtcat agtagctgat gccttagaga taaatcttgc 2460

tccagaaatg aaactttccc cagacccgtc cactgacaca ggctcttgta ttgaaatctt 2520

gtgaaaaaca gtcaaggtta actaacttgg agttgaatgt gatacaatta tagattaaaa 2580

atatcagaag catttccaga ttattcttaa aagttgatga gatcttccca aaccagaatg 2640

acaactgagg atgagatgtg catagattaa atggtaaagt gggtggttct caggtgagaa 2700

gcagtgagga ccattcattt tgcagcctaa aaattttagg ggatgcaaac tgtcatttcc 2760

ccttcagtta tgtaaataat tgaagaaaaa tctggtttct tctcttcctg atctatctag 2820

gtgagaagag atttgtagaa ataacctgca caaccctttt aggctgcttt gagcaaatcc 2880

aagaaggaaa gcagagactt agcacatttg gtataatgca gccacatctt agatgaatat 2940

attttggtt atttccattt atgtttcctc tcgtgctgct gagatctatt tgctctatgg 3000

ttaaaaagtt caatagttcc tgaggacagc atcatataga ggaaagaggg ctttgagtct 3060

gacatatttg ggtttgcata ccagtcttat catttaccag ctgcgtgacc ttgaggaggc 3120

agcttaactt ctcttagtct ctgttccctc atctgtaaaa taggattagt agtgctgcac 3180

cttacaaggt tgtgatgaga attaaatgac acaatgtatg aaagtgctgc cattgtgcct 3240

ggcacaggta gaagtcactg gataagaagt agctaatttt aatgtatttc ttgagactgc 3300

tgaagcaata tctcaaataa tacatacgct acacaaaatg gaataaagtt tctctggaaa 3360

agttcaagta tctctatgag atccccagtt atttttataa gtaccgatct ctaaactcat 3420

gtgtaaagta aaaaattctg ccatataaac tctacatatt atataatttt tctataacta 3480

cctttgctag aaatttatct gaatattcca aacaaaagtg ttaatgatgg ttaaacaaaa 3540

aaactcggtg ttgtttggag ggctgtctgt cctgtgtgtt gtaggatgtt tagcagcatc 3600

tctggcctcc actcactaga tggcagtaac accctctccc cagttgtgac aaccaaaaat 3660

gtctctagac gtggccagat gtctcctggg tgcatcacct tggttgatct ctactgctag 3720

acctatcgta tatgtcaaga acaacaaagc tgtatggaaa tgtgagtgct gactggacag 3780

ctatgccctc ctgttaactt aagacaattc aaattgtgct ttagtaagag gactaatcaa 3840

tactagtgtt gggccttcag gattcttggc aaacacactc caacatgtgt gctaatggtc 3900

tcatactttg taggaaggga agaaaataag gaaagcacat aaactagcaa aaatctatag 3960

ctcatgaact tggtttagtg tggacaaccc tgttcttttc agaactattt aatcattaat 4020

agttcttacc aagtagaagt gatcccaggc aaagaaacaa ctttccaatg cattcaagag 4080

agaatcatac ggacaaccat cattctcagc agctcattaa atgcaaatac acacacgcaa 4140

agagagagag agaacacatt ttacatagtt ttccagctgt tgttagtgtc acttaaaact 4200

gatctctgct ggtagtattc agttgtgagt atagcaagac actgcatagg agcatttttt 4260

ttctaaacct ttagctaaga tttggaaacc caatatttcc taagtagtga atgtggtcta 4320

tttatagtaa ttagcttagg tgacacacca aacatgatga gttgctcatt caggatagcc 4380

ggtccattgc acaaatgtgt aatatcaggt actctcatgc cactcattgc ctgcatcagt 4440

cagtcatgac ctttgcatca gcctttcaat agacagtcat caggctagta tcttatctca 4500

tcactacttg acgatgagtt cgccgaatta gactgttcta taccagtaca acaaccaaaa 4560

tactttctca tagattatgc ataaatacgc aattttgtcc atgtcaatga acctaacaag 4620

aatgcttttt aaaagtatat tttagattca aacatgcttt ctagatcaga ggttaacttg 4680

tctttttgaa atcctggagt cacttataag ttagctgcaa actgtagttt cggtagttca 4740

actgcttaag catttctgga ctgtttatca aaatatatta cagaatgtga gactaaagtt 4800

taaagtctgg acctttggtt taatttctag actttccaaa gctttttttt ttctttttaa 4860

aaagcccatt gtcaactctc ttagaacttc atcaagtaaa tggtaccttg caaatgtagg 4920

ttgtgtctga ccttctttct ttttgtgtgt tggtgcctca gatgtatcat gtgctgcttg 4980

aactgattct ctacagtgtt ccttcctagt ctcaagctga tgatgtgctc aaagatgtat 5040

caaaatccat gtaatgacac cttttagatg tttctaatat gtcaataaat gatatattgc 5100

<210> 435

<211> 3443

<212> DNA

<213> Homo sapiens

<400> 435

aggtgagtag gggctgaatg cggctggaga ggctgccgga cgggcgtggc cgggagggaa 60

atggggctgg attccagagc atcggacctg gccgccagaa ccggccgttt ctatcccagg 120

caatcggact ctgggtgccg gagccacgcc acgtgtggcc gagggctggc ggggcctgcc 180

cccgagggag cgctgagtcc cggaggtggt cgttctgggg gagggggctg tggggctcgt 240

cccacctgcc cccttctttc cagcacttgc atggcgcttc cctctatttt cactcttggc 300

ggccgcccac acgttgcatt cctcctcctt tcttcttctt gctgtcctcc atcctccatt 360

ccgtccaatt cctctcccag cccctgggga gcctacctta ggtctgactc tgaaccccga 420

tctgctctga gtgtgtggat ttccttcagc taccctgatg tccccacttc ccagccctga 480

ctcctttgag ccatcccagg gggtgtccag ccactggccc acaggagcag aggccaggct 540

gtgactgtgt gactagaaag gtgtgtgatg tgtgtgtggg cgtgcacacg agtgtgagag 600

tgtaagcatg gcaccctggc ccgggctagg acaggagcag ctggggaagc agcctgggcc 660

gtgggcaaac tgatggcttt tttcctcccc ccaaccaccc ccccccgcga cttctggccc 720

tacccagtct aaaccaatgt ggtaggggtg gcggcagggg cagggatggg agtgcttgaa 780

gcctgcttca ttcccaaaga tttctaggga aaagctttct actacatcct ttggcttgac　　840

cttcttgacc catgactctc tttcaaggaa gttcactcca attcccagtc tgccctgttt　　900

ccactggcca cattctctaa ggaagaacac agcagaacaa tagcatctgt tttgtttctg　　960

catggctgga gggtagggct gtcggtctag cacccataaa ccaaaatgag gcagggattg　1020

gggcttgccc tatgatgctc tgatgaccaa agcagatgcg tagaggcaag cagcatggta　1080

ttgggcaaga ggactggact gggagtccag agatgctgct tcaccctggg cctttagaca　1140

cgtctctttc cctcccagag cctcagcatc ccttctatca aatgatgaca ttctgccttt　1200

ttcccagggc ggttgtgggg atcgagggag acagtggcta tagggatgct gtgttaactg　1260

cagatgcagc cgtaggagca ctttgctaac tgccaacgtg agttcagatt cttcagggta　1320

tttggcaccc aggtctatgg tgcggtgtga gatctgtgat gtaaggtttg atgcctgccc　1380

caactccagt cttgctaaca cacatgaaac atttggcaaa tcatgaccct accttggg ga　1440

aaagagcagt ctgggagagc ttcttcaagg caacctgact tcagtgcagt ctgaggcatg　1500

gctgagatag gcttacgtgg caaggaatca ggagggtatc tgggccaaga gctgcagtgt　1560

gggcagaggt gtagtgtggg ctgcaacgag gacagccact ggacaaagca gagaacagag　1620

acagaatgag gaagagctct gtgggcaggg tggggcgcaa ggtggagaac cttcaaagtc　1680

tgaaaagttt gacttgttgg ggctcaatgc tgtgggcagt agggaaccac agaaggctct　1740

taggtggaga aatgacagct ggactttagc gagcaagccc tatctccatg agcagcacgg　1800

gtgatcctct aagcacacca ggcacgagtg tgcagggagc tggtgcaaat gcctctgtgt　1860

gcgggtgagc ttctgtgttg tgactctgcc cacacgtgtg cttcagtgtg ctgagtggct　1920

gcatgcccca gatccatgct gcacgcgccg ccggccagtg agggtgctgg cactgggag　1980

gtggcgggga aggaggcgta tgcgtgttgt ttgtgggcat gtgtgttagc gtgtgcatgt　2040

gggccatggg gcctcacagc atgtgtgtgc acgcccgggc gtgtgcgtgt gtgtgtcccc　2100

cacccccagg ccggccccac ccgtgcgtgt gaactgccat gttgatttcg tgctgtcttt　2160

cagaatcact atcagtgacc cctgaggagc gtcagccatg caggaagggc ccagcctcac　2220

ctacgagacc tgcagccccc cgaccagctg aggctcccct cttagactta taagtctatg　2280

gccactggca tccggctgcc tgccctccct gcctccccca gggtcccttc agagggtcct　2340

gggttttctg aacacccaga ggggcctccg gcgctccctc cagccatccc ttttagtttc　2400

accctcctgg ttcaagcagt gttctttctc tatcaggcct ggtggctgtt gcatggggct　2460

ccccaaggca aggggtggcc ccaggccagt gggttggaag acagggtgac cagagaagag　2520

```
ggaagcccga gggggccgag catcagcctg aattgcgggt gccctgcctg ggtgccgtgt   2580
gagaggccag cgtgtgtggg gtggggaggg ccgccacagc ccccaggcgc tatctgtgaa   2640
gctacggctc ctccctccat cttcctcccc tttcccttcc agcccctttt ccaggaacct   2700
tgccacaccc acacctgcag cctcccctcc ccggccctcc caccactgct gcggcgcggc   2760
cggccccggc cgtgtgctgc gcttgcctta ccagctctct cctcgctttt ctctcccgtt   2820
ttctctctgc tttctctcca actgccagcc gatcgggtca ggcaagtcca tcccgtcctg   2880
agagccccag gcccccttc gacctctaaa cagatccctc ctcttctcgg agacctccct   2940
ttccaagcct gcctggacgg ctgttctgtg acttgacagt ggctccccca gccccaaagc   3000
cagcccctt catctgtgac ttaatctgtt gtagtggtga ctgatacat tcaggtgtga   3060
ccgttggtga aaacttgtgc cccttctgtg gtatgccctt gccctgttct ataaatatct   3120
ataaatactc atatatatac acacctacac atggccaacc gcctcgcctc tagcgctggg   3180
aatcagtcac tgtgctatcc ttgtggagtc ttgtggccca actaccagag aacgctgtcc   3240
cccgacatcc cactccaaag tgtgccacct ccagtgagcc tccttgtcat gcccggcctg   3300
tggacagcca gcccccgcca tccctcccac cccctaccaa gcatgggggt gctgtgcagg   3360
cagccgtgtg gcctgacagt ttctaccagt cctgctgtcc ctcggctgag aataaaaccc   3420
atttctggat gatggggaat gtc                                          3443
```

<210> 436

<211> 4057

<212> DNA

<213> Homo sapiens

<400> 436

```
ctgttaatag agttatggaa tcattgagct aaatgaagtt tgcatatgaa caaatgaatg    60
aattggctac aaattgatat gatttataga aactctgttc gaaagtattg gggacttgat   120
gtttaaacat tattttagta aaaattccta taaccatgta tcatctgtag gattgatttg   180
gtacctattt ctcctgttgg accatgagtt cctccagagc agagcttttg tcttagacta   240
ttttatttct atttctattt cttttttttc tttctttttt tttttttttt tgagacagtc   300
```

tcttgctctg tcacccaggc tggaatgcag tggcatgatc tcggctcact gcaacctctg　360

cctgcagggt tcaggtgatt ctcctgcttc agcctcccca gtagctggga caggcgcatg　420

ccaccgtgcc cggctagttt ttgtatcttt agtagagaca gggtgttggt cagaccggtc　480

ttgaactcct gaccttgtga tccgcccacc tcggcctccc aaggtgctgg gattgcagat　540

gtgagccacc atgcccagcc tagactgttt tatttcttaa gcactgtttt cctaatttct　600

taagcactga gctcccttaa aattcagcaa atgtttgtta atgatgatga atattttact　660

aatttcttta aaacatatt ttcaattgaa gttgcaaaac cttggaacct cttaatttat　720

atcttgcata aatgacaatt tgttaaagtt aagatacatt gctgtggaaa tctatgtatt　780

tctttactgc aaaatagtat taaaggaaac taaatgaatt caagaatat gagctttata　840

atttaatttt taggattcgc taaatattgt aatggatcaa ggagatacac ctacactaga　900

ggaagatttg aagaaacttc agctctctga attctttgat atctttgaga aggagaaagt　960

agataaggaa gctctggctt tatgtacaga ccgagatctt caggaaatag gaattccttt　1020

aggaccaaga aagaagatat taaactattt cagcaccaga aaaaactcaa tgggtattaa　1080

gagaccagcc ccgcagcctg cttcaggggc aaacatcccc aaagaatctg agttctgcag　1140

tagcagtaat actagaaatg gtgactatct ggatgttggc attgggcagg tgtctgtgaa　1200

ataccccgg ctcatctata aaccagagat attctttgcc tttggatctc ccattggaat　1260

gttccttact gtccgaggac taaaaagaat tgatcccaac tacagatttc caacgtgcaa　1320

aggtttcttc aatatttatc acccttttga tcctgtggcc tataggattg aaccaatggt　1380

ggtcccagga gtggaatttg agccaatgct gatcccacat cataaaggca ggaagcggat　1440

gcacttagaa ctgagagagg gcttgaccag gatgagtatg gaccttaaga acaacttgct　1500

aggttcgctg cggatggcct ggaagtcttt taccagagct ccataccctg ccttacaagc　1560

ttcagaaaca ccagaagaaa ctgaagcaga acctgaatca acttcagaga agcctagtga　1620

tgttaacaca gaagagacct ctgtggcagt taaagaagaa gtcctgccta tcaatgtggg　1680

gatgctgaat ggaggccaac gcattgacta tgtgctacag gagaagccta ttgaaagttt　1740

taatgagtat ttatttgctt tacaaagcca tctatgctac tgggagtctg aagatacagt　1800

attgctcgtc ctcaaagaga tctaccaaac ccagggtatc ttccttgatc agcctttaca　1860

gtaaaaatga cccatctatg gctgcttaat acggacattg agggatcctt ccccagaaaa　1920

tccacctgtt tgttgctgca attttcctct cctcagctgc gtcatttcct gcatgttgcc　1980

tgccacttac tcaccactgg ggtctttgga agataatctt cctctttgga aatgaatgga　2040

aaagcaaaag gccctattac ttttaaccac tggcttcata taaacacttg ccattttttt 2100

ctgcatagct gggggtggtt tgtgtcttta attctttgat gatagtttat agttgccaca 2160

ctttattgat tagtacttga cagggtgtaa agcctatttt gggtttgatt tgttttgggt 2220

ggggtagaca tgttttaag gaacttattg cttatcttta gaaaatgttc tagtttggaa 2280

acagattctt gagattcaga aggcattttg gagtacactt atctcttgtt tgtgttgaac 2340

tgaaggctaa gtctcagtgg acatggaaaa gactttggg tgatttattt ttgaacctgc 2400

atttctttct tatgtgtagt gtatgaagaa agactagaat gtagctttaa aaaagtgttg 2460

tttactcttt tagaactgac agacttattg ccagaaatca ctgatgttca ttgttttgc 2520

aactgtttga gctgctgtaa gagtctaaag ttgacaagtt agttcatgtt aggtgcatct 2580

ttataaagca aagatgttgt atatcctagg cctcctttt atatttgata gaagttattt 2640

gctaatagct tctattctta cgttgaaaat agttgtaaaa gctgatgaac ctgaaattgt 2700

gtagcctcta caggctgctg aggttctaaa taaaaccttt tagtggtgcc tttatggtga 2760

aacagaattt gtcacctgcc atttctactt gagctaaggt agtattgtgt atcctctttc 2820

cttcttaggt atccataatc cacaaagcat atttaaaagg ctcttggcac gggcagcatt 2880

ggttgagcag gtaggtttgg ctaggggaa atgtttaact tgttctgaaa gaaaaactta 2940

tgtctgtagg gtccaagaaa cagctattcc agagtcagtg tcagctgagt ctggaacata 3000

tgaagtgagg tttacttcta agaacacaag tgactgcaca ctaattttgt caaggcatct 3060

tttcactact ttgctgtaga tttttcttct tcattggtca gtttgtcatt gtctttgtag 3120

ttctctttat gataatcctt tatacttgct ctcagattcc acaggcctct gtttatagag 3180

tggcaaaggc aggcgagctg tggtttattg tttataaatt tttttataaa tgttatggta 3240

ttcaaagcca ctgacattta atatttactg aagccattcc ttagacagca gtggtcttta 3300

tccctttctg gaaagaaaag gaaaatgaag ggtaattact gtcaccatgg agattgtaga 3360

ggtaaggttg gggtataggt caggcctggc ctttctttgt catctgctta tagtctagtg 3420

ctaagtatgc cactaagttt cagatatatg gaatactta tttttttaaa ggtatataaa 3480

ctctgagtta ttgagaatta agtattcact gtatattaag gggaagcttt tgccaagttg 3540

tggtcttcaa atttatgttt actcttccta ttggcagaat aggtgctatt taagagtaaa 3600

ccaaaggata agcagaggga gtccctataa ccaaagatgg acagcatagc cctggatagc 3660

cagataaacc actctttgta ttaagaaatg tttctttcct agtggtgagg ggtgggtaac 3720

tgtgaaagag ctttatatct tgtctattca tggtattata gctgtatatt cccaggatga 3780

```
taagcttgat tgaaatcctg tatttagtca tatattattt gcgctgcttc atttgtatca  3840

tgtgcaatct ctagaccaac cctattttta aactctggta cagcatcatt ttgtacatat  3900

tcccagctgc agaactagta tcacttatct cagcaaaaga gattgtttgc atggaaagat  3960

taatagcact gattagattt ctaatatttt gcatttttga aatgtttgtt ttctacgtga  4020

ttatatttaa aactttagta aatactaaca tgaaacc                           4057
```


<210> 437

<211> 3604

<212> DNA

<213> Homo sapiens

<400> 437

```
ctttgggtag caatgactga gcaaatagag ggagtggaat gtttaggaat gtgctttcac   60

ctaatatcat aacagtgaga ctccttggat aaataggagt gggtgcattc tcctcgctct  120

cagatcagga aactagagca actgccccaa gcagcatggc gggaagcgtg ttctttgtaa  180

attgttcttt tcgttacatt cgttaaaagg ccttgtgttt ttcaatctgg ggggttgcat  240

gggacatttt gagttcaaag acaccacgat gaggcacgaa gaagatagaa agccagaagg  300

aagaaatgcc agggagttcc caccttgagg gtctgtctag ccacccctcc cagaggattg  360

gtccttatag gcaatgccat ctccatgggg ccagacccta cctgtccaga tggaaagctg  420

cgatctcagc attgtgtctc tgaaagtcaa tgaagtagaa gaagtccact ggtgtctcct  480

catctcgctg ctgtctggaa ggaaggaagg aatcacgccc tggactcaga cttcagctgg  540

gagcctgaga agagagctga tgagcatgac cagcgagaaa ggaaaacggg cttttatgct  600

tttcatgtac acacaggcga tggcacggca agtcaggaat ggcctgtggc tcccttcgcc  660

aggagaagac aagcaaagtg ggaggagaca ggcttcttgc aagacactgt cctgcaggca  720

ccaccaatac caagtttcct gcttaagaag ctttggtgac agtggctgat tattttcaaa  780

acccagcagt tgagagggaa gaaatagaca ttcttctgca ggtataaaca gaagagaggg  840

gaatggttag cagaaccaga ggtagtgcag atccagatgt ccaaggatga agaaaggtgg  900

ggtatgagcc aggaattggt aatggaaaag tggcccagaa atgcaactta gtatgctggg  960
```

gttgaagaac agaaaagttc tgggtcttag ggggatgtgg gggaaatacg tggaccatca   1020

tcccctcaga gaaacacagc cggatcatga gggctggggg cagctggtgc agaggatatt   1080

gatttatata cattaaatct ctaatgaatt cctgaaaagc gccaggctgc ctgggagtgg   1140

tggggcctgc tgggtgtgta cattcatgaa agtgcttttt aatccttaag ggccttgtgg   1200

tgtgagttct ggcctctagg ctgactttgc ctcgaggcta ataaacatgg aagaatgatg   1260

atcttcgaat aattttataa tccactgtgt gggactgttg aaacgactgc aaggcgattt   1320

agatgtaaat aaacgtgatg ttgcagaaat ctataaataa gaagcactgg caatttaaac   1380

cgtgttgtgc attttgccaa aaaacacgag tgagtcctgg aaaccacagt gaggtgctgc   1440

caaaagtaga gattctattt taaaaggtgc agccaccgtt acagcacaac cctccgtgct   1500

caggcctggc cagcttatca tcatcactgg atgtccaggc tagcaaggac aatccctctt   1560

cccagtctca ttttaattcc tgagtcccat ctgtaggaac atatcatctt tcagacacct   1620

tttaggttct tctaaaacat tttctcattt ttgtatgatg taagataaga agtaatttta   1680

aattcaaagg ttgtttttac tttagatcag tgcttctcat actttgagaa gcactaatgc   1740

acgtctcatt gcacattata ttgtatacat tacattttaa aaatataaat ctttatgttc   1800

ctaatgtata ttttccaaag ttaaagttct acattctctc tttaatcaga aaaaaatggt   1860

gttcgcctta aattacttac agaaaaatac aaagcgcata attttttcaag agatacattt   1920

taaaatgata gtattttaga tttgggactg aatttTataa aaatgtagat tacactgtgt   1980

tatggtatga aaatagataa aattggtcct gtcactgaat gttggagggt tttgcattgt   2040

atttcggaaa aaagctggct agttggaaca attttttgtat agacacactt cggagatatt   2100

gcaggtttgc ttctagacca ccacaatgaa gcaaatatgg caataaagtc attcatgcac   2160

attttttggt tcccacccca aggcatataa aagttacgtt tcattatact ggagtccaat   2220

aaatatgcaa tagcattatg tctgaaaaat gtatacatct taatggaaaa agcactttat   2280

tgctaaaaaa tgctaacact cttctgagcc ttcagcaagt cataatcttt ttgctgactg   2340

actggggtgg tggttgctga aggttggtga ggctgtggca acttttaaaa ataagacaat   2400

aatgaagttc gctgcatcga ttcacaaaag atgtatctgt agcacgcaat gctgtttgat   2460

agcattttac ccaaagtaga acttctgtca aaattgaagt cagtcctctc aaaccctgct   2520

gctgctttat caactaagtt tgcataatat tctaaatcct ctgtggccat ctcaacaatg   2580

ttcacagcgt cttcaccaga agtagattct atctcaagaa accactttct ttgcttatcc   2640

ataagaagcc actccttatt ggtcgggtgc ggtggctcat gcctgtaatc caagcacttt   2700

gggaggctga ggcaggtgga tcacgaggtc aggtgattga gaccatcctg gctaacacgg   2760

tgaaaccctg tctctactaa aaatacaaaa aattagccag gcatggtggc gcatgcttgt   2820

agtcccagct acttgggagg ctgaggcagg agaattgttt ggacccagga ggcagaggtt   2880

gcagtgagcc gagattgcgc cactgcacta cagcctgagc aacagagcga gactccatct   2940

caaaaaaaaa aaaaaaaaa aaaaaaaaa gcagcaactc tatctgttca agtttgatca   3000

tgcagttgca acaattcagt cacattttca gactccactt ctaattctag ttctctttta   3060

tttccacatc tgcagttacc ttctccactg aagtcttgaa cccctcaaag tcatccatgg   3120

ggattgagat caatcttctt ttaaactcct gttaatgttg atatttttac ctccttccac   3180

gcatcacaaa ttttcttaat ggcatctaga atggagactc ctttccagaa agttttcaaa   3240

tgaccttgcc caggttcatc agaggaatca ctaactgtgg cagctatagc cttatgaaat   3300

gtatttctta aattgtaaga cttggctggg cgtggtggct cgcgcctata atcccagcac   3360

tttgggaggc cgaggcgggc ggatcacgag gtcaggagat caagaccatc ctggctaaca   3420

cggtgaaacc ctgtctctac taaaaataca aaaattatc cgggcatggt ggccggcgcc   3480

tgtagtccca gccactcggg aggctgaggc aggagaatgg cgtgaacccg ggaggtggag   3540

cttgcagtga gctgagattg agccactgta ctccagcctg ggcgagagtg cgagactacg   3600

gctc   3604

<210> 438

<211> 3978

<212> DNA

<213> Homo sapiens

<400> 438

atttcagcct gaagggaaaa ttggtaatca agttgagaag tctatcaaca atgcttcctc   60

agtttcaaca tcccaaggaa tttgttgtag gcccaaaacc catatttcta ataagtatgg   120

aaataattcc ctccattctt cattactcac acaaaaacgg aatgtacaca tgagagaaaa   180

atctttccaa tgtattgaga gtggcaaatc ctttaattgt agctcacttt taaaaaaaca   240

tcagataacc cacttagaag agaaacaatg taaatgtgat gtatatggca aggtatttaa   300

tcagaagcga taccttgcat gccatcgtag atctcacatt gatgagaaac cttacaagtg　360

taatgagtgt ggcaagatct ttggtcacaa tacatccctc ttccttcaca aggcgcttca　420

tactgcagac aaaccttatg aatgtgaaga atgtgacaaa gttttcagtc gcaaatcaca　480

ccttgaaaca cataagataa tttatactgg agggaaacca tacaaatgta aggtttgtga　540

caaagctttc acatgtaatt catacctagc aaaacatact ataattcaca ctggagagaa　600

accttacaag tgtaatgaat gtggcaaggt ttttaatcga ctgtcaaccc ttgcacgcca　660

tcgtaggctt catactggag agaaacctta tgaatgtgaa gaatgtgaaa aagttttcag　720

tcgcaaatca catcttgaaa gacataagac gattcatact ggagagaaac catacaaatg　780

taaggtttgt gacaaggctt ttgcatataa ttcatacctg gcaaaacata gtataattca　840

cactggagag aagccttaca agtgtaatga atgtggcaag gtttttaatc aacaatcaac　900

tcttgcacgc catcatagac ttcatactgc agagaaacca tacaaatgtg aagaatgtga　960

caaagttttc aggtgcaaat cacaccttga aagacatagg aggattcata ctggagagaa　1020

accatacaaa tgtaaggttt gtgacaaggc tttccggagt gattcatgcc ttacagaaca　1080

tcagagagtt catactggag agaaaccata cacgtgtaat gaatgtggca aggttttttag　1140

tacaaaagca aaccttgcat gtcatcataa acttcatact gcagagaaac cgtacaaatg　1200

tgaagaatgt gagaaagttt tcagtcgcaa atcacacatg gaaagacata ggaggattca　1260

tactggagag aaaccgtaca aatgtaaggt ttgtgacaag gctttccgga gggattcaca　1320

cctggcacaa catcagagag ttcatactgg agagaaacct tacaagtgta atgagtgtgg　1380

caagaccttc cgtcagacat catcgcttat aatccatcgt aggcttcata ctggagagaa　1440

accttacaag tgtaatgagt gtggcaagac cttcagtcag atgtcatccc tcgtatacca　1500

tcataggctt catagtggag agaaacctta caagtgtaat gaatgtggca aggtttttaa　1560

tcaacaagca caccttgcac agcatcagag agttcatact ggagagaaac cttacaagtg　1620

taatgagtgt ggcaagacct tcagtcagat gtcaaacctt gtataccatc atagacttca　1680

tagtggagag aaaccttaaa agtgtaatga gtgtggcaag accttcagtc agatgtcaaa　1740

gcttgtatac catcatagac ttcatagtgg agagaaacct taaaagtgta atgagtgtgg　1800

caacaccttc catcacaatt caacccttgt aagtcacaaa gccattcata ctggagagaa　1860

actttacaag tgtaatgaat gtggcaaggt ttttaatcaa aagacaaccc ttgcacgtca　1920

tcatagaatt catactgcag agaaacttta caaataggaa gaatgtgaca aagttttcgg　1980

ttgcaaatca aaccttgaaa cacataagaa aatgcatact gaagagaaac cacacagatg　2040

taaggtttat gacaagattt ttgaatataa ttcatacctg gcaaaacata ttagaattca 2100

aactggagag aaaccttaca aatgtgatga gtgtggcaac acctttggtc aaaattcaca 2160

ccttgtaatt caaaaggcaa ttcgtactgg agagaaaccc tacaagtgta atgaatgtgg 2220

catagttttt aatcaacagt cacaccttgc aagtcatcat agtcttcata ctgcagagaa 2280

atcttacaaa tgtgaagact gtgacaaagt tgtcagtcac aaatcacagc ttgaaagaca 2340

ggagaattca tactggagaa aaaacataca aatgtaaggt ttgtaacaag gctttttggga 2400

gtgattcaca cctggcacac catactagaa ttcacactgg agagaaacct tacaagtgca 2460

atgagtgtgg caaagccttt agtgggcagt caccacttat tcaccatcaa gcaatccata 2520

gtatagggaa acttgactaa tataatgatt gtcacaaagt tttcagtaat gctacaacca 2580

tttcaaatca ttggagaatc cataatgaga gatcttacaa gtgtaataaa tgtgacagat 2640

tttttcagata tcgttcatat attgctattc atcatcgaac tcatgctgga gagaaaccct 2700

ataaatgtca tgattgtggc aaggtcttca gtcaagtttc atcctatgca aaacatagga 2760

ggattcatac aggagagaaa ctcacaagtg tgatgattgt ggcaaagcgt ttacttcaca 2820

ttcacacctc aatagacatc agagaatcca tgctggacag aaatcttaca aatgtcatca 2880

gtgtggtaag gtcttcagtc cgagatcact ccttgcagac catcagacaa ttcctttttgg 2940

agacagttgt ttcaaatgcc atcagtatag caagccatca agcattaatt gacattacag 3000

ttaaatgagc actgacctga gtttgagttg acttaacatt gagtttaagc attaattgac 3060

attaaactgt ttatgttaag aggactgggc tgggcactgt ggctcacgcc tgcaatgcca 3120

gcactttgag aggccaagac tggtaggtca ctggaggtta agagtttgag aacagcctgg 3180

ccaacagacg ggagccactt ttcccagcct gtgtttttcat ttctattctt tctttctttt 3240

ttctttttttt tgtttttgtt tttgagatgg agtctcttgc tctgtcatcc aggttggagt 3300

gcagtggcat gatcttgact cactacaacc tccgcctccc aggttcaagc gatcctcctg 3360

cctcagtctc ctgactagct gggactacag gtgcgtgcca ccacacctgg ataattttttt 3420

gtatttttag tagagactgg gtttcactgt gttagcctgg atggtctcga ttttctgatc 3480

ttatgattca cccacctcta cctcccgaag tgctgagatt atgggcgtga gccaccgtga 3540

ctggcctgtt ttttgtttct ttaacaaaaa gttatgggga tttctatgag tattgtgttg 3600

aatctaaatc acattcggtt atataatcat tgagcaatac taattttttcc aatcaatatg 3660

gattgtatgt gtatttatat gtttttaatc attttgatca atgtttgtag atttcaaggt 3720

acaaacttct cacctttata tgtttattcc taaatatttc ttactttaag ctctttagca 3780

aatggaagtg gttttaatt ttattttaaa attatttaat gttaatgtat ggaaattcaa 3840

ctaatttttg gtgctattat tctattctgc aaatacactg aatatgttta ttagttccag 3900

ttgtattttg gttgactgtg atattcttca cagatcatgt catctacaaa caaataaaat 3960

ttgacttctt tctttctg 3978

<210> 439

<211> 4854

<212> DNA

<213> Homo sapiens

<400> 439

agtccaggtt tcatctcggt ttctctgcct tccagcctca tccatgggac aacttccata 60

tcctggaggc ccctctggga aacgctgcct tcagcccatg aagtcgctcc gctgtgcagt 120

cgtgggcctg tagtaggcag ctggagcgtg gaccgttggg cttttgtaat taaacagctt 180

ttattgtgat aaaatattta taatgtataa gtgaccattt taaccatttt aagtgcacag 240

tttcatggcg ttaagaacgt tcatattgat gtgcagccat caccaccctc catctccaga 300

actttctcgt cttcccagat ggaaactctg tccccatccc ctccttctcc tggcacacgc 360

caccactctg ctttcttttt ctatgaatgt gacaactcta gggccctcac gtgaggtgag 420

ccatgcagta catgtcctct tgtgtctggc tgccttcacc gagcactatg ccctcgaggt 480

gcgtccgcgc tgcagtgcgt gtcagaactc cctttccaag cctgagtgtg gacgggccac 540

accgcgttca tccctccaac tgtcactgga ccttttggtg ccttccagct tttggctgca 600

gtcaatgagg ctgctctggg ccttggtgaa caaccgtggc ttttgccgtc tggcagcccc 660

atgcgggtgg cgctttgctc tgccaggcag gagattggcg gtgccatgtt ggtgcttttg 720

gtgaagacca gagtgttttc attgcttgcc attgaggagt gtttttactt atggaaacga 780

tatactgtct gtgaatatcc tgctctaaaa attgataacc aggtcctgcc cgatgggtgt 840

ttacaaatat ttgccatatg gaagtcatga ggggactcct gggtcactta cagagggaac 900

agcctatagg aggggtactt ggcaggtggt ggctggagtc ccaagttcct gcccttccca 960

ccaggctgca agggtcaaac tgacatcttt gggacgagca caggacatca tcctccagct 1020

cagtcccctt tgctaaagac acactcagga ggggacagca ccttttgaaa cctaactcct 1080

gcaaaggggt agatatgtaa acttggggta gccttgtgtc ctgggggcta ggctgacaaa 1140

tatctttttta aagatcatct aactgctggg gaggctgtct ctttgaagat gatttacttc 1200

ttctaactgg gtttcatttt tctctcctag cttatgttcc tgaggaagaa ttgaaggcag 1260

cagaaataga tgaagagcac gtggaggatg acgggctgtc tttggacatt caggaaagtg 1320

agtacatgtg caatgaagag acggagatca aagaggcgca gagctaccag aactccccag 1380

tcagctctgc gactaaccag gacgccggct acgggtcgcc cttcagtgag agcagcgacc 1440

agctagccca tttcaaaggc tcttcctctc gagaagagaa ggaggatccg cagtgtcccg 1500

acagcgtctc gtacccccag gacagcctgg cacagatcaa agctgtgtat gcaaacttgt 1560

tctccgagtc ctgctggtcc agcttagctc tggatttaaa gaagtcgggt tccaccacca 1620

gcaccaacga tgccagccag aaggagagct ccgcccccac ccccacaccc cccacctgcc 1680

ccgtcagcac cactggcccc accacgagca cgcccagcac cagctgcagc tccagcacca 1740

gccacagcag taccaccagt accagcagca gctccgggta cgactggcac caggctgcac 1800

tggccaagac gctgcagcag acgtcctcgt atgggctgct tcctgagccc agcctgttca 1860

gcaccgtgca gctctaccgc cagaacaaca agctctacgg ctccgtcttc acgggcgcca 1920

gcaagttccg gtgcaaagac tgcagtgccg cgtacgacac gctggtggaa ctgacggtgc 1980

acatgaacga gacaggccac taccgtgacg acaacaggga caaggactcc gagaagacca 2040

agaggtggtc caagcccagg aagcgctccc tgatggagat ggagggggaag gaggatgccc 2100

agaaggtgct gaagtgcatg tactgtggac actcctttga gtccttgcag gacctcagcg 2160

tccacatgat caaaaccaag cattaccaga aagtgcctct gaaggagcca gtgccagcca 2220

tcaccaaact ggtcccctcc accaaaaagc gggcgcttca ggacctggcg ccccccctgct 2280

cccctgagcc agcaggaatg gccgcagagg tggccctgag tgagtcagcc aaggatcaga 2340

aagcagcgaa cccgtacgtc acgcccaata accgctatgg ctaccagaat ggcgccagct 2400

acacctggca gtttgaggcc cgcaaggcgc agatcctcaa gtgcatggag tgtggcagct 2460

cccacgacac gctgcagcag ctcaccgccc acatgatggt caccgggcac ttcctgaaag 2520

tgaccacctc ggcttctaag aagggcaagc agttggtgct ggaccctgtg gtggaagaga 2580

agatccagtc catcccacta ccgcccacca cccacacgcg gctgccggcc tccagcatca 2640

aaaagcagcc cgactctccc gcggggtcca cgacttctga agaaaagaaa gagccagaga 2700

aggagaagcc gcctgtggct ggcgacgcgg agaagatcaa ggaggagagt gaggacagct 2760

tggagaaatt tgagcccagc accctgtacc cgtacctgcg tgaggaggac ctggacgaca 2820

gccccaaggg agggctggac attctcaagt ccctggagaa taccgtctcc acggccatta 2880

gcaaagctca gaatggtgcg ccctcatggg gtggctaccc cagcatccat gcagcctacc 2940

agctcccggg caccgtgaag ccactgccgg cggccgtgca gagcgtgcag gtgcagccgt 3000

cctatgctgg cggcgtgaag tcgctgtctt ccgccgagca caacgccctc ctgcactccc 3060

cagggagcct cacgccccca ccgcacaaga gcaacgtgtc tgccatggag gagctggtgg 3120

agaaggtcac gggcaaggtc aacatcaaga aggaggagag acccccctgag aaggagaaga 3180

gctccctggc caaggctgcg tcccccatag caaaagagaa taaagatttc ccgaaaacgg 3240

aggaagtcag cggcaaacca cagaagaagg gccctgaggc cgagactggg aaggccaaaa 3300

aggagggacc gctggacgtt cacaccccaa atggcacaga gcctctcaaa gcaaaggtca 3360

ccaacggctg taacaacctg gggatcatca tggaccgctc accggagcct tccttcatca 3420

acccgctgag cgctttgcag tccatcatga cacccacct gggcaaggtg tccaagcccg 3480

tgagtccctc gctggacccg ctggcgatgc tgtacaagat cagcaacagc atgctggaca 3540

agccggtgta ccccgccacc cctgtgaagc aggccgatgc catcgaccgc tactattatg 3600

aaaacagcga ccagcccatt gacttaacca agtccaagaa caagccgctg gtgtccagcg 3660

tggctgattc ggtggcatca cctctgcggg agagcgcact catggacatc tccgacatgg 3720

tgaaaaacct cacaggccgc ctgacgccca agtcctccac gccctccaca gtttcagaga 3780

agtccgatgc tgatggcagc agctttgagg aggcgttgga cgagctgtca ccggtccaca 3840

agagggaggg ccggcagtcc aactggaacc cgcagcacct tctcatcctg caggcccagt 3900

tcgcctcgag cttgcgggag accacagagg gcaagtacat catgtcggac ttgggcccgc 3960

aggagagggt gcacatctcg aagtttactg ggctctccat gaccaccatc agccactggc 4020

tggccaatgt gaagtaccag ttgaggagga caggggggaac gaaattccta aagaacctgg 4080

acacagggca tcctgttttc ttttgcaacg attgtgcctc tcagttcaga actgcttcta 4140

catacataag tcatttggag acacacttgg gcttcagcct gaaggatctc tccaagctgc 4200

cactcaatca gattcaagaa cagcagaatg tttcgaaagt cctcaccaac aaaactctgg 4260

gcccactggg ggccaccgag gaagacttgg gctccacatt ccaatgtaag ctctgcaacc 4320

ggactttgc gagcaagcac gcagtcaaac tgcaccttag taagacccac ggcaagtctc 4380

ccgaggacca cctgatctat gtgactgagt tggagaaaca gtagcgtcca ggtatgcaag 4440

agaccgcgga acattgcact aaacgtcgtc gagctgcact aggcctggcc tgagcctctg 4500

aaatcagtct ttcctttgtt gctggcccgc ctctctggac cttggttttc ttacacatat　4560

tttgtatatt tatatgctct ctgtccgatc tgtgcatgtt atttttcttt ttccgtgagt　4620

caaagtctga cctttatttt caacatctgt tcttggtgtt aagctatctt ttgtaggaaa　4680

tagtggggca cactactcag agacattatt tagcagtaaa gaaagacaca aataacaatg　4740

ataaaaagac atcctaaaat ggtgaagttg ccatgacaat aaaggtcata gaacctggta　4800

gtgtcaaatt taaccctttg aggactgtaa ttgcatttct gtgcctttca cttg　4854

<210> 440

<211> 5008

<212> DNA

<213> Homo sapiens

<400> 440

aagtaccaag gtctgcggca ggaggagacc ggctcacagg agcagcagca ttggaagagg　60

cacccagcag cctcccaggc atcctggagg gtctgctccc tgtctttcca aggatgagtc　120

tccaggagat gttccgcttc cctatggggc tcctgcttgg ctctgtgctc ctggtggctt　180

cggccccagc cactctggag cctcccggct gcagcaacaa ggagcaacag gtcactgtca　240

gccacaccta caagatcgat gtgcccaagt ctgccttggt tcaggttgac gctgaccctc　300

agcccctcag tgacgatggg gcttcgctct tggccctggg ggaggccggg gaggaacaga　360

acatcatctt caggcacaac atccgccttc agacgccaca gaaggactgc gagttggcag　420

gcagtgtcca ggacctcctg gcccgggtga agaagctgga ggaagagatg gtggagatga　480

aggaacagtg tagtgcccag cgctgctgcc agggagtcac tgatctaagc cgccactgca　540

gcggccacgg gaccttctcc ctggagacct gcagctgcca ctgcgaagag ggcagggagg　600

gccccgcctg cgagcggctg gcctgccccg gggcgtgcag cggccacggg cgttgcgtgg　660

acgggcgctg cctgtgccat gagccctacg tgggtgccga ctgcggctac ccggcctgcc　720

ctgagaactg cagcggacac ggcgagtgcg tgcgcggcgt gtgccagtgc cacgaagact　780

tcatgtcgga ggactgcagc gagaagcgct gtcccggcga ctgcagcggc cacggcttct　840

gtgacacggg cgagtgctac tgcgaggagg gcttcacagg cctggactgt gcccaggtgg　900

tcacccccaca gggcctgcag ctgctcaaga acacggagga ttctctgctg gtgagctggg　960

agccctccag ccaggtggat cactacctcc tcagctacta cccactgggg aaggagctct　1020

ctgggaagca gatccaagtg cccaaggagc agcacagcta tgagattctt ggtttgctgc　1080

ctggaaccaa gtacatagtc accctgcgta acgtcaagaa tgaagtttct agcagcccac　1140

agcatctact tgccaccaca gaccttgctg tgcttggcac tgcctgggtg acagatgaga　1200

ctgagaactc ccttgacgtg gagtgggaaa acccctcaac tgaggtggac tactacaagc　1260

tgcgatatgg ccccatgaca ggacaggagg tagctgaggt cactgtgccc aagagcagtg　1320

accccaagag ccgatatgac atcactggtc tgcatccggg gactgagtat aagatcacgg　1380

tggtgcccat gagaggagag ctggagggca agccgatcct cctgaatggc aggacagaaa　1440

ttgacagtcc aaccaatgtt gtcactgatc gagtgactga agacacagca actgtctcct　1500

gggacccagt gcaggctgtc atagacaagt atgtagtgcg ctacacttct gctgatgggg　1560

acaccaagga aatggcagtg cacaaggatg agagcagcac tgtcctgacg ggcctgaagc　1620

caggagaggc atacaaggtc tacgtgtggg ctgaaagggg caaccagggg agcaagaaag　1680

ctgacaccaa tgccctcaca gaaattgaca gcccagcaaa cctggtgact gaccgggtga　1740

ctgagaatac cgccaccatc tcctgggacc cggtacaggc caccattgac aagtacgtgg　1800

tgcgctacac ctctgctgac gaccaagaga ccagagaggt tctggtgggg aaggagcaga　1860

gcagcactgt cctgacaggc ctgaggccag gtgtggagta cacagtgcat gtctgggccc　1920

agaaggggga ccgagagagc aagaaggctg acaccaacgc cccgacagat attgacagcc　1980

ccaaaaacct ggtgactgac cgggtgacag agaatatggc cacggtctcc tgggacccgg　2040

tgcaggccgc cattgacaag tacgtggtgc gctacacctc tgctggtgga gagaccaggg　2100

aggttccggt ggggaaggag cagagcagca cagtcctgac aggcctgaga ccgggtatgg　2160

agtacatggt gcacgtgtgg gcccagaagg gggaccagga gagcaagaag gccgacacca　2220

aggcccagac agacattgac agcccccaaa acctggtgac cgaccgggtg acagagaata　2280

tggccactgt ctcctgggac ccggtgcggg ccaccattga caggtatgtg gtgcgctaca　2340

cctctgccaa ggacggagag accagggagg ttccggtggg gaaggagcag agtagcactg　2400

tcctgacggg cctgaggccg ggtgtggagt acacggtgca cgtgtgggcc cagaaggggg　2460

cccaggagag caagaaggct gacaccaagg cccagacaga cattgacagc ccccaaaacc　2520

tggtcactga ccgggtgaca gagaatacag ccactgtctc ctgggacccg gtgcaggcca　2580

ccattgacag gtatgtggtg cactacacgt ctgccaacgg agagaccagg gaggttccag　2640

tggggaagga gcagagcagc actgtcctga cgggcctgag gccgggcatg gagtacacgg 2700

tgcacgtgtg ggcccagaag gggaaccagg agagcaagaa ggctgacacc aaggcccaga 2760

cagaaattga cggccccaaa aacctagtga ctgactgggt gacggagaat atggccactg 2820

tctcctggga cccggttcag gccaccattg acaagtacat ggtgcgctac acctctgctg 2880

acggagagac cagggaggtt ccggtgggga aggagcacag cagcactgtc ctgacgggcc 2940

tgagaccagg catggagtac atggtgcacg tgtgggccca aaggggggcc caggagagca 3000

agaaggctga caccaaggcc cagacagaac tcgaccctcc cagaaacctt cgtccatctg 3060

ctgtaacgca gtctggtggc atattgacct ggacgccccc ctctgctcag atccacggct 3120

acattctgac ttaccagttc ccagatggca cagttaagga gatgcagctg ggacgggaag 3180

accagaggtt tgcgttgcaa ggccttgagc aaggcgccac ctaccctgtc tcccttgttg 3240

cctttaaggg tggtcgccgg agcagaaatg tatccaccac cctctccaca gttggtgccc 3300

gtttcccaca cccttcggac tgcagtcagg ttcagcagaa cagcaatgcc gccagtggtc 3360

tgtacaccat ctacctgcat ggcgatgcca gccggcccct gcaggtgtac tgtgacatgg 3420

aaacggacgg aggtggctgg attgtcttcc agaggcggaa cactgggcag ctggatttct 3480

tcaagcgatg gaggagctat gtggaaggct ttggggaccc catgaaggag ttctggcttg 3540

gacttgacaa gctacacaac ctcaccaccg gcactccagc gcggtatgag gtgagagtgg 3600

atttacagac tgccaatgaa tctgcctatg ctatatatga tttcttccaa gtggcctcca 3660

gcaaggagcg gtataagctg acagttggga aatacagagg cacggcaggg gatgctctta 3720

cttaccacaa tggatggaag tttacaactt ttgacagaga caacgatatc gcactcagca 3780

actgtgccct gacacatcat ggtggctggt ggtataagaa ctgccacttg gccaacccta 3840

atggcagata tggggagacc aagcacagtg aggggtgaa ctgggagcct tggaaaggac 3900

atgaattctc cattccttac gtggagttga aaatccgccc tcatggctac agcagggagc 3960

ctgtcctggg cagaaagaag cggacgctga gaggaaggct gcgaacgttc tgatggcccg 4020

tgtgagcagt cctcgcagga gacaccacca gctgtgggag cttggggcgg ggtgggtagt 4080

ggtcactgcg gtctgggagt gctcagatag cccgcagaac aaatcatgtc accaagcttc 4140

aagccatgga ggttccttcc ctctcacctg cattttgcc cgtctttatg agggtcttga 4200

aaatcaaaat agtagttgca cagtatgtgt aggaaagaca gtactggaac ggcaaggttt 4260

ctcagcttat cttcagcaac atatatactg gattagggca agagaaggaa tcacccagca 4320

cttcaccagt tggaaatctc tggaaattta catctatgta tttaaagttc tgctaatgca 4380

```
aatcttttct ctggaaagaa gcacagagga ggagttctga tgacccaggg gttagggctg   4440

agacaaccgg acgtttgtca cctcctttcc cattgggttt ttaggaaaac agtgtgaacc   4500

tccccctttt aatttctggt gttatgagga agaataaagg ggataaaagg ggctaagatg   4560

gactcatgtt tagctaagtt ctgacttgta tccagcatgc tggagaccaa agctgccgcc   4620

ttactgctat ttttaagtgc cctcttttca gtcatttgca taattgcgtc catagagctg   4680

catatgttgt gaataaattc tcactcattt caactttgaa taatttgact gtcttgataa   4740

ttggttcctc ccaaagactc ttctgcaact cccattcatg cccaccaggc ctcagactcc   4800

ctcttttccc cgccctgcac tattggagcc ctgggttttg tgggagtgct cagcaccgtg   4860

agtcttactg tttgatcgga cagttagcaa gatcagatcc tttttgctta ttttctatca   4920

ctttggaggg ttttctgtag caaaatcagt gaccaatgaa gtaacttaaa ttcctattga   4980

agaaaaaaaa taataaacca cttgattt                                      5008
```

<210> 441

<211> 5734

<212> DNA

<213> Homo sapiens

<400> 441

```
aaaacaccat gccctgccat ctctgggtct tagagtcacc ctaacatctg atctagatta   60

attatcatca tgtgcgaggt tttggcatga agcacgccag gctcaccgtt tcatgagctt   120

agactattta cagcaaactc aaacagctca cttgcttttt acaccctgca aagaccaagg   180

gagagcctgg aggggttgtt tttttttctg ttttattcta tcaaagcagc aaatactgca   240

atttccacag taaatggtca cagtggggac caatatcctg ccctccagac ccgctgcatc   300

agccaataca gcaagggaag acgcagctct gttttctaga aggatcccac cgaggcataa   360

aaacggcgca gcccagcctg gcgccgcgcc gggtcccgga gccccgggcg cgaacatggg   420

gaatgcgcac tccaaaagcg gggacaggca cagcgcgctc cccggccgcc ccgagctgtc   480

tttttacggc tctttcccca ggaaatggag cgagaacgtc ttcttggata acgagctgct   540

gacctccaag atcctgtcta tgctgcggcc gcagtcggag cggggcttcc gcgccggggga   600
```

cctccgctac ccgacccact ttctcagcac caactctgtc cttgcctctg tcacagcctc   660

gctcaaggag cacccccggg gcaccctcct gtccgatggc agcccggccc tgtccaggaa   720

tgtcggtatg acggtctctc agaaaggggg tccccagcca acaccgagcc cggctggccc   780

tgggacgcaa ctcggaccag tcacaggaga gatggatgaa gccgattctg cgttttaaa   840

atttaagcag acagctgatg actctctgtc ccttacatct ccaaacaccg agtccatttt   900

tgtagaagat ccctacaccg cctcgctgag gagtgagatt gagtcagacg gccacgagtt   960

tgaagctgag tcctggagcc tcgccgtgga tgcagcctac gccaagaagc aaaagaggga   1020

ggtggtgaaa agacaagatg tcctttatga gctgatgcag acagaggtgc accacgtgcg   1080

gacgctcaag atcatgctga aggtgtactc cagggccctg caggaggagc tgcagttcag   1140

cagcaaggcc attggccgcc tcttcccatg cgctgacgac ctgctggaga cgcacagcca   1200

cttcctcgct cggctcaagg agcgccgcca ggagtccctg gaggagggca gtgaccggaa   1260

ttatgtcatc cagaaaatcg gcgacctcct ggttcagcag ttttcaggtg aaaatgggga   1320

gagaatgaaa gaaaagtacg gtgtgttttg tagtggccac aatgaagctg ttagtcatta   1380

caagttgctg cttcagcaaa acaagaaatt tcaaaacttg atcaagaaaa ttggcaactt   1440

ctccatcgtg cggcggcttg gcgtgcagga gtgcattctc ctggttacac aacgcataac   1500

caaataccca gtgctggtgg agcgcatcat ccagaacacg gaagctggca ctgaggacta   1560

tgaagacctg acccaggcct tgaacctcat caaagatatc atctcacaag tggacgccaa   1620

ggtcagtgag tgtgagaagg ccagcgcct cagggagatc gcagggaaga tggacctgaa   1680

gtcttccagc aaactcaaga acgggctcac cttccgcaag gaagacatgc ttcagcggca   1740

gctccacctg gagggcatgc tatgctggaa gaccacatca gggcgcttga aagatatcct   1800

ggctatcctg ctgaccgacg tacttttgct gctacaagaa aaagatcaga aatacgtctt   1860

tgcttctgtg gactcaaagc cacccgtcat ctcgttacaa aagctcatcg tgagggaagt   1920

ggccaacgag gagaaagcga tgtttctgat cagcgcctcc ttgcaagggc cggagatgta   1980

tgaaatctac acgagctcca aagaggacag gaacgcctgg atggcccaca tccaaagggc   2040

tgtggagagc tgccctgacg aggaggaggg gcccttcagc ctgcccgaag aggaaaggaa   2100

ggtggtcgag gcccgcgcca cgagactccg ggactttcaa gagcggttga gcatgaaaga   2160

ccagctgatc gcacagagcc tcctagagaa acaacagatc tacctggaga tggccgagat   2220

gggcggcctc gaagacctgc cccagccccg aggcctattc cgtggagggg acccatccga   2280

gaccctgcag ggggagctaa ttctcaagtc ggccatgagc gagatcgagg gcatccagag   2340

cctgatctgc aggcagctgg gcagcgccaa cggccaggcg gaagacggag gcagctccac 2400

aggcccgccc aggagggctg agaccttcgc gggctacgac tgcacaaaca gccccaccaa 2460

gaatggcagt ttcaagaaga aagtcagcag cactgacccc aggccccgag actggcgagg 2520

ccccccaaac agcccggact tgaagctcag tgacagtgac attcctggga gctctgagga 2580

atcgccgcag gtggtggagg cgccaggcac ggaatccgat ccccgtctgc ccaccgtcct 2640

ggagtcggag cttgtccagc ggatccagac actgtcccag ctgctcctga accttcaggc 2700

ggtaatcgcc caccaggaca gctatgtgga gacgcagcgg gctgccatcc aggagcggga 2760

gaagcagttc cggctgcagt cgacgcgtgg gaacctgctg ctggagcagg agcggcaacg 2820

caacttcgag aagcagcggg aggagcgcgc ggccctggag aagctgcaga gccagctgcg 2880

gcacgagcag cagcgctggg agcgcgagcg ccagtggcag caccaggagc tggagcgtgc 2940

gggcgcgcgg ctgcaggagc gcgagggcga ggcgcggcag ctacgcgagc ggctggagca 3000

ggagcggggcc gagctggagc gccagcgcca ggcctaccag cacgacctgg agcggctgcg 3060

cgaggcccag cgtgccgtgg agcgcgagcg ggagcgcctg gagctgctgc gccgcctcaa 3120

gaagcagaac accgcgccag gcgcgctgcc gcccgacaca ctggccgagg cccagccccc 3180

aagccaccct cccagcttca cggggaagg gctggagggc cctcgtgtga gcatgctgcc 3240

atccggcgtg gggccagagt acgcagagcg ccccgaggtg gctcgccggg acagcgcccc 3300

caccgagaac cggctggcca agagcgatgt gcccatccag ctgctcagcg ccaccaacca 3360

gttccagagg caggcggccg tgcagcagca gatccccacc aagctggcgg cctccaccaa 3420

gggtggcaag gacaagggcg gcaagagcag gggctctcag cgctgggaga gctcagcgtc 3480

cttcgacctg aagcagcagc tgctgctcaa caagctcatg gggaaagatg agagcacctc 3540

acggaaccgc cgctcgctga gccctatcct gtccggcaga cacagtcctg cgcccccacc 3600

agaccctggc ttccccgccc cgagcccacc gccagctgac agcccctccg agggcttctc 3660

tctcaaggcc ggggggcacag ccctcctgcc cgggccccca gctccctcgc cactgccggc 3720

cacaccactc agcgccaagg aggacgccag caaagaagac gtcatcttct tctaaaaggg 3780

ccgtgactca aggaaagttt ttaatggaaa gttgagccag aactaaacca gggagctgtc 3840

tgaaatcata gcaccccatc cgggtggcgg ggagatcaac tccgagctgt ttttccgagg 3900

cagtgaggaa cggtgccggc tctgcacgga gctgaggaca ggacagacct tgctttgaga 3960

aggagctgcc ggccgggggcc acgctccaca gccgccgcgc gacagtggag ccaagggtta 4020

gggcaccagg aggggccagg tggcgtcggc agcatctgtc cccagaatca ggcagaatcc 4080

```
acttcccaaa cagagcccca cgcaggttca ccatgaacct cagggtcagg gaatgagcca   4140

ggcacggggg catgggcaga gagggccacg gggcagggcc cactgaggga acatcagtgg   4200

ccctccagtc aggttctgtg ggtttggaag cccatcgtga aaggggctga cctttgcccc   4260

tttttacttg gcattggttt tgaaaccagc tgtttcccaa actctgcttc ccaagggcaa   4320

ccgttgctgt tcacacgctc agcctgtctg ggggagcggg cctctagctt cagccagggc   4380

gggtacacac cctgggcaca gggtcctcag cccccgggaa atgagctccc agggctggcg   4440

tcccaccttc caggtggggg ctggcacatc acagactgtc gagagcgcca tgtcccaggg   4500

catgcagagg atgcacctag agacgttgca gcaagtggac aagtggccgc tgtgcgggcc   4560

cctcgcttgt agtgagctgt tgcagcttac ggtccgttcc ctggaggggt ggaggaagga   4620

ggtgttgggc agcatcaaag gtgctgggac atcccagggt ggtgagatcc atccacgatc   4680

cagctccggt ggagaaaggg cccatgtcaa gccttgttct gcaccccaag cattggtggt   4740

aggactgggt cctggctgat cgtccttgtt cccagtgggg tacatgtgag cccctgccag   4800

ggccaagtcc ttctccccgaa cccagggtcc tgggaactgc agatcccggg gggattcagc   4860

ccttctccca ctgtgctggc agaggcactc ctgtgacgct gaatacagtg aacagggaca   4920

ttcccgccac tcggggacag atgggcacaa gggaggggaa actccatcag gaagtgctcc   4980

cctgggcaga ggcgcccact gggtgctgtg ggctcaggag ggggcggggc aggagctggt   5040

gccaaccggg aaccagagcc ccacagccat acagcccatt ggtgacaagg tcctgagaac   5100

acagtggcca ggtgtcccca ggctcctggc ccctccgacg acctcaactc tgcccagccc   5160

ggtccctggc catcagcgac gctgtccgcc ccccgtcaga tcccatgtgt gccatgttta   5220

tcatcagtgt tttgtatttt tgtactgagt atcggagcac tttacagaag ctgactgtac   5280

attcctgttc tgttgtgaag agaacattcc cagaccctgg caccctcctg agccggcgtg   5340

tgccggtcca gccctccgag atgccacaat tccttggatg ggggagaagt tcaaggaatt   5400

tctgctcggc cacgcggtgg gaaccccgcg tccccgccat gtggcagagg ggtctcagtc   5460

gtgctaggca tcgggcggca gcgccgacag cccttccctc gccagtgccc ctcggccact   5520

cctgggttgg agcccgattt tatttgtaaa gttgacagtc gagcaaatgt tcctattttc   5580

gtgggatctg cacacgtctt tgtcagttgt ggtcatgatc ttagtcacct gctaattatt   5640

tttacaatga ttacaacatt tcctcactgc gggatatttc tgacccgctt tagaacttaa   5700

gacctgattt tagcaataaa cgtgtccggg gtgg                               5734
```

<210> 442

<211> 4966

<212> DNA

<213> Homo sapiens

<400> 442

atgcggggcc cagtgggcac cgaggaggag ctgccgcggc tgttcgccga ggagatggag   60

aatgaggacg agatgtcaga agaagaagat ggtggtcttg aagccttcga tgactttttc   120

cctgtggagc ccgtgagcct tcctaagaag aagaaaccca agaagctcaa ggaaaacaag   180

tgtaaaggga gcggaagaa gaaagagggg agcaatgatg agctatcaga gaatgaagag   240

gatctggaag agaagtcgga gagtgaaggc agtgactact ccccgaataa aaagaagaag   300

aagaaactca aggacaagaa ggagaaaaaa gccaagcgaa aaaagaagga tgaggatgag   360

gatgataatg atgatggatg cttaaaggag cccaagtcct cggggcagct catggccgag   420

tggggcctgg acgacgtgga ctacctgttc tcggaggagg attaccacac gctgaccaac   480

tacaaggcct tcagccagtt cctcaggcca ctcattgcca agaagaaccc gaagatcccc   540

atgtccaaaa tgatgaccgt cctgggtgcc aagtggcggg agttcagcgc caacaacccc   600

ttcaagggca gctccgcggc agcagcggcg gcggcggtgg ctgcggctgt agagacggtc   660

accatctccc ctccgctagc cgtcagcccc ccgcaggtgc cccagcctgt gcctatccgc   720

aaggccaaga ccaaggaggg caaagggcct ggagtgagga agaagatcaa aggctccaaa   780

gatgggaaga aaaagggcaa agggaaaaag acggccgggc tcaagttccg cttcggggggg   840

atcagcaaca gaggaagaa aggctcctcg agtgaagaag atgagaggga ggagtcggac   900

ttcgacagcg ccagcatcca cagtgcctcc gtgcgctccg aatgctctgc agccctgggc   960

aagaagagca agaggaggcg caagaagaag aggattgatg atggtgacgg ctatgagaca 1020

gaccaccagg attactgtga ggtgtgccag cagggtgggg agatcatcct gtgcgacacc 1080

tgcccgaggg cctaccatct cgtatgcctg gacccagagc tggagaaggc tcccgagggc 1140

aagtggagct gcccccactg tgagaaggag gggatccagt gggagccgaa ggacgacgac 1200

gatgaagagg aggagggcgg ctgcgaggag gaggaggacg accacatgga gttctgccgc 1260

gtgtgcaagg acggggggcga gctgctctgc tgcgacgcct gcccctcctc ctaccacctg 1320

cattgcctca acccgccgct gcccgagatc ccaaacggtg aatggctctg cccgcgctgt 1380

acttgccccc cactgaaggg caaagtccag cggattctac actggaggtg gacggagccc 1440

cctgccccct tcatggtggg gctgccgggg cctgacgtgg agcccagcct ccctccacct 1500

aagcccctgg agggcatccc tgagagagag ttctttgtca agtgggcagg gctgtcctac 1560

tggcattgct cctgggtgaa ggagctacag ctggagctgt accacacggt gatgtatcgc 1620

aactaccaaa gaaagaacga catggatgag ccgcccccct ttgactacgg ctctggggat 1680

gaagacggca agagcgagaa gaggaagaac aaggacccccc tctatgccaa gatggaggag 1740

cgcttctacc gctatggcat caagccagag tggatgatga ttcaccgaat cctgaaccat 1800

agctttgaca agaaggggga tgtgcactac ctgatcaagt ggaaagacct gccctatgac 1860

cagtgcacct gggagatcga tgacatcgac atcccctact acgacaacct caagcaggcc 1920

tactgggggcc acagggagct gatgctggga gaagacaccg ggctgcccaa gaggctgctc 1980

aagaagggca gaagctgag ggacgacaag caggagaagc cgccggacac gcccattgtg 2040

gacccccacgg tcaagttcga caagcagcca tggtacatcg actccacggg cggcacactg 2100

cacccgtacc agctggaggg cctcaactgg ctgcgcttct cttgggccca gggcactgac 2160

accatcctgg ccgatgagat gggtctgggc aagacggtgc agaccatcgt gttcctttac 2220

tccctctaca aggagggcca ctccaaaggg ccctacctgg ttagcgcgcc cctctccacc 2280

atcatcaact gggaacgcga gtttgagatg tgggcgcccg acttctacgt ggtcacctac 2340

acgggggaca aggagagccg ctcggtgatt cgggagaacg agttttcctt tgaggacaac 2400

gccattcgga gtgggaagaa ggtattccgt atgaagaaag aagtgcagat caaattccac 2460

gtgctgctca cctcctatga gctcatcacc atcgaccagg ccatcctggg ctccatcgag 2520

tgggcctgcc tggtggtaga tgaggcccac cgcctcaaga acaaccagtc caagtttttt 2580

agggtcttaa acagctacaa gattgattac aagctgctgc tgacagggac ccccccttcag 2640

aacaacctgg aggagctgtt ccatctcctc aacttcctga ctccagagag gttcaacaac 2700

ctggagggct tcctggagga gtttgctgac atctccaagg aagaccagat caagaagctg 2760

catgacctgc tggggccgca catgctcagg cggctcaagg ctgacgtgtt caagaacatg 2820

ccggccaaga ccgagctcat tgtccgggtg gagctgagcc agatgcagaa gaagtactac 2880

aagttcatcc tcacacggaa ctttgaggca ctgaactcca aggggggcgg gaaccaagta 2940

tcgctgctca acatcatgat ggacctgaaa aagtgctgca accacccta cctcttccct 3000

gtggctgccg tggaggcccc tgtcttgccc aatggctcct acgatggaag ctccctggtc 3060

aagtcttcag ggaagctcat gctgctacag aagatgctga agaaactgcg ggatgagggg 3120

caccgtgtgc tcatcttctc ccagatgacc aagatgctgg acctcctgga ggacttcctg 3180

gagtacgaag gctacaagta tgagcggatt gatggtggca tcaccggggg cctccggcag 3240

gaggcaatcg acagattcaa tgcccccggg gcccagcagt tctgcttcct cctctcaacc 3300

cgggcaggtg gtctgggcat caacctggcc acggcggaca ctgtcatcat ctacgactcg 3360

gactggaacc cgcacaatga catccaggcc ttcagccgcg cccaccgcat cggccagaca 3420

aaatggaagc ccagctgggc tacatggatg agaaagaccc cggggcacag aagccaaggc 3480

agcccctgga agtccaggcc cttccagccg ccttggatag agtggagagt gaggacaagc 3540

acgagagccc agccagcaag gagagagccc gagaggagcg gccagaggag acggagaagg 3600

ccccgcccтc ctcggagcag ctgccgagag aggaggtgct tcctgagaag gagaagatcc 3660

tggacaagct ggagctgagc ttgatccaca gcagagggga cagttccgaa ctcaggccag 3720

atgacaccaa ggctgaggag aaggagccca ttgaaacaca gcaaaatggt gacaaagagg 3780

aagatgacga ggggaagaag gaagacaaga aggggaaatt caagttcatg ttcaacatcg 3840

cggacggggg cttcacggag ttgcacacgc tgtggcagaa cgaggagcgg gctgctgtat 3900

cctctgggaa aatctacgac atctggcacc ggcgccatga ctactggctg ctggcgggca 3960

tcgtgacgca cggctacgcc cgctggcagg acatccagaa tgacccacgg tacatgatcc 4020

tcaacgagcc cttcaagtct gaggtccaca agggcaacta cctggagatg aagaacaagt 4080

tcctggcccg caggtttaag ctgctggagc aggcgttggt cattgaggag cagctccgga 4140

gggccgcgta cctgaacatg acgcaggacc ccaaccaccc cgccatggcc ctcaacgccc 4200

gcctggctga agtggagtgc ctcgccgaga gccaccagca cctgtccaag gagtcccttg 4260

ctgggaacaa gcctgccaat gccgtcctgc acaaggtcct gaaccagctg gaggagctgc 4320

tgagcgacat gaaggccgac gtgacccggc tgccatccat gctgtcccgc atcccccсgg 4380

tggccgcccg gctgcagatg tcggagcgca gcatcctgag ccgcctgacc aaccgcgccg 4440

gggaccccac catccagcag ggcgcttтcg gctcctccca gatgtacagc aacaactttg 4500

ggcccaactt ccggggccct ggaccgggag ggattgtcaa ctacaaccag atgcccctgg 4560

ggccctatgt gaccgatatc tagccgtcct cgagacttcc ctgtgttgca gcgctcattt 4620

ccagctgagc cacgcctgcc gggccacctg cccgacccac atgggagaga aaagctgcca 4680

ccttттtagg agccagcgcc accttgggac aaaaagggaa acctagtaat gccatcacat 4740

ggaggacgag gcccagctca gctgggccag agcccagaag tgccacctca tcataattca 4800

agtgttcttc cacacagcgt tgcccccaca accacgccgg acgtgccccc tcgccacctt   4860

ttccagacga cttcttagaa gagatttcat ttatttgtac atcttttgca ctttcctatt   4920

gaagacttga acacgtttgt cttgataaaa gttggatgac gtatgg   4966

<210> 443

<211> 4481

<212> DNA

<213> Homo sapiens

<400> 443

aatgtgggag aggccggcgg ctctgacctt ggtgtgttac agcccttgcc acctccctcc   60

gctgccctgc atggggactc aaaccacaaa cagcagctcg gaaacaagca gacacgcgtc   120

ggactctggt tcacggggaa gagcgctgtt taggagatgg acgtgctcca cgcagagacg   180

cgtcgggctc tgattcatgg ggaagagctc tgtttaggag atggacgtgc tccacgcaga   240

cacgcgtccg gctctggttc acggggaaga gcgctgttta ggagacggac gtgctccacg   300

cagacatgcg tccggctctg gttcacgggg aagagcgctg tttaggagac ggacgtgctc   360

cacgcagaca cgcgtcccgc tctggttcac ggggaagagc gctgtttagg agatggacac   420

gctccacgca gacacgcgtc gggttccggc tcacggggag gagcgcgctg tttaggagat   480

ggacacgctc cacaccacct ctggcgtcct ctctgccctc aggctcttgg gcattcagag   540

ccaggagctg tttctgggga ggcagagatc cctccaagcc ccaggaaagg cctcctgctg   600

cctcggggac aaagctgtgt caggctcttc tctccacgct ccccaaggga ggggaggtgc   660

tcagaaacag accaagagac tcagttggtg ccaggatggt gcccgtgacc agggagatgt   720

gcacatgcgt tcagcgtcac tggggaaggg acagccacac aggcagtctc aggctgtagc   780

tgaaacccca ggcatttccc taaagcacca gcgtccagaa ctgaagaagg accagcccc   840

atccggcccc agaccacagt ggggaacctt ccagggccag tctcccctg ctgcccttcc   900

cgcagggcca ggggctggtc agcagcacag gccgcccccg cgctgcagt cctggacgtc   960

catggctgac agctcctggg cctggaacac tgccctttcc tccagctctg caaagacact   1020

tgaggttcca gccaggacac gggacataaa gggggtcagc cctcacggac agtgtttcca   1080

tagagggttc aggaggttta taaacaccag caggatggat gacaccacag ccaccacagg　1140

agccagcatc caagagaccc cgtgagatgc caagggtcac tcgtgcccga ggtgccctcc　1200

ggaaccggag actacagata ccaggggatg cttgggccaa gtgtgtccag ccacgaaggt　1260

tactgcccgg ccctgggagg tcactgggac caggagctgc ccccacaagg aatgggcgga　1320

aggaaagggt gaccgagtgc ccggccccgt gcccgtggct caggaagaca tgctgtgttt　1380

gcatttctgt tgttcccaga gcgaggggat gagaagcctg aggccggccc gtccctgctc　1440

cagacgcccc cccaccgctc cccctcatag gagccaagga ggaggaagtg cttcattctt　1500

tgcaaagaat actccgcctg atgcaatttg cgtgtgcaag atgtgtgaag tgccttttcc　1560

atttcatcag cacccgcagc ctgtatgaag ctgctgtttg ctctctgcca gctcgtgggg　1620

cttgaatggt atcacgggag gttcttcatc ttgcggtggg acggtcgcct cctgctgatg　1680

gctccgcgtt ttcattgacc acattcatta caaagagaca tttcaaaaca tgttctgcag　1740

ctgatttgct ccttggcccc aagaatggaa tacagataat ctgctcacat ccatcaggaa　1800

gcactggttt tctttcggga cacaaccgaa cgtgccagga ctgcaggagc cgctggatta　1860

cagagcagca aaccaggcat ggcaggcggt gctcgcggag gtaccacggg gcggaccagg　1920

gtgtgcagcg ttacgtgact tgggaagatg tggggggccc gatgtatcta ccaggagaca　1980

gtggagacct ctacccttta gctgtcctct gtcccacaca acccagcccc cactgggcgg　2040

ccactgcagg ggaagctcag ctggaaggtt ccatgggaga gaccagacca gtcctggcac　2100

tgtccagcag ctgccttcgg cccatgttct gaaaccggga tgcacacagc atggagatct　2160

cagccctggg caggcctcgc cccctccagc agctgccctc ggcccatctc ccaaagcctg　2220

gacgcataca ctggggagac ctcagctctg ggcaggcctg ggttcccatc gcttcggcgt　2280

ccctgggccc gggacacgga acacacttgc tgcgtgctgt gtacaagaat gaacgaatcg　2340

gcctgcctag caccccttgg ccggctccag gcctccactt gctgtgtcaa gtgaggctcc　2400

cacgtgctga ggggacagag ggtccctgtg acctgcaatg ctcccactct cacccacgca　2460

gctgctcacc tacacagccg gtttctccag ggctaacagg ccacccagat gcaagccagt　2520

ctcagccccт gaccacactg gttttcaaat gaactgtgga ctctcatgac agagaagcgg　2580

ctgggagtcc cagcgtggga tgtggtggga cggggctggg gtgtgcagag acgatgatgg　2640

aggagctcct gggggcacac agacctagtg tcgctctcag ggctgggtcc gcaggccacc　2700

ctccctccct caacaacact cacgcctgct gcagccccag gaagggtcag gactcacaga　2760

tgccaacaag caagcagccc gtgctggaag catcaccacc accggcccca gcaaaggctt　2820

```
cctggtgtgt gcggctgacc atcggccact cgggtagaca gaagtgtggg tgggctgtgt 2880

gcatgccagg gcagacggac agcccggggt ctcaggccaa tggaaacagg aagtttccgg 2940

ctccatttga atactggtgg aaatgccggg ccctcatgct gaataggaca ctccatccaa 3000

gcttgccgcc tcctcggagg cttgggccag tcaccgggcc cggctgtgct ttcacagctg 3060

cttttcttat gggagagcaa gatctcctgg gattcaagac cctaccagga gtagaagaca 3120

agggtcatgg gaaggctgtg tgagccctca aggggcacca tggaccccga gcaccagcga 3180

tttgcgctcc tggttccgag agcccagcgc tgaatcctgg cagatgggga agctgagctc 3240

tgtctgacct gctctggaaa acaactggtc cagagaagga cgaagatgtc acttaattct 3300

gagttgctga ggataagcca ggggccctgg aggtgactgt gctgcccaca gcatcccaag 3360

ggatgccaca tccccacagg ggcagcccag gtcccccaga ggattgtgtg ccccccacca 3420

ccaaggtcct tgcccactgg tctgtgcctc aataggacag cctccttctc acactatttt 3480

gaaatataaa aataacactc atcacccatc acccagtcac tcagaatcac accagcgggg 3540

gcacagaggc gacggcatgt agttctccag cctgtttgtg agcacgggtg tacatgtaca 3600

cacacacaca cacacacaca cacaaatgca catgcacgga cacatgcaca cacacataca 3660

cgtgcacaca cagacatgca cacacacgta cacacatgca cacacacaca cgtacgcaca 3720

tgcggggtca gggagctgat gctgtgcgag gctgtcgagg gcttcttcac tcagcggcac 3780

ttgggaagcg ctgctctgtg ggaggcccct catccatgtc ctcgttattg gcagcacaaa 3840

tctccaagtg aggaggggcc atgtttacca gccgtccttc cagcccacgt ctcctacggt 3900

tccttatttt cacaggtact gttttgcaga cacagagccc ccaagcagcc cacacgtctt 3960

agccgggtga agctttgctt tatgaagtgc tgcctggacc cctgatggtc ggccctcccc 4020

gtcgagacag tggcaggcag gcggggggtgc tcagggctgt ctgcagggg cagccaggac 4080

ctcactgagg tggccgactg ggtccacgcc ctcctcagcc tgcactgctg gacaggcccc 4140

aagaagtcgt gctcggcgtg gcccaagaac gggaagcggc agcgtcctgg cgtcctaggt 4200

gagacttcaa gacggctccc tgctcccacc tgggctaaag gtggaacccc aggtgtaaag 4260

agcccctgg ggtacagggg aggctggatc agcagacgcc ggctctggga gggccctgag 4320

gggctgtgga gggaaggtga ccccgcagtg gcagcggcag cggaagcagg acggcgcggt 4380

gcccgacacc tgaggccact ctccctggac gggggcgggg cggcactgag aggcggccat 4440

aaaaaccgga gtttatttaa taaaacaaga gcccacgcgg c 4481
```

<210> 444

<211> 5098

<212> DNA

<213> Homo sapiens

<400> 444

agtttgcatc ttaggtcaca ccactcctgt gattcctgtg gtattgcccc aaagcggcct   60

cacaccagag acgggttaag aagagggatt ggaggtccac cactccacta gcccaggaag   120

gacttatctt tcgtctcagc cagacctcac cccaattctg tgaatcagcg gaggaaggca   180

aaagtgcaga gagtcagagg aggctgtgta aggagcagag accagggctc acacagctgg   240

ccccagccca ggccctggcc caggcccagg agcctgcttc cctgcatcgc tgaggaagaa   300

cagcaccatg ctgggtcctc acctcccacc tccgcccctt gcacccagcg aagggaggcc   360

taccccctgc gccttccaga tccctgatgg aagctacagg tgtctggctc tggaagccga   420

ggagagcagc ggtgaggagg gcctgcaggg agaggtgggg cctaccgacc tggaagagga   480

tgagggggtc agcaggagtg gggacgactc tgcctgcaga gtcacccagg ggacaccgca   540

gctgcccaaa gccctgggca tccaaccacc cagctgctcc agagaggaac aaggggcgtc   600

ccagcacgac gacagggcca gccaggactg ggatgtagtg aaggccgggc agatgatgac   660

agccagcccc agccctggcc ctgggcccag agtggcccag aaaccagcgt tgggccggag   720

cactagcctc acggagaagg atctgaaaga agccaaggcg cggagccagc agattgcagc   780

ccagctgacc acccctccca gctccaattc ccgtggcgtc cagctcttca acaggcgccg   840

gcagagggtg aacgagttca ccttggagag ccacggccag aggggacaga gcccagcca   900

ggagtccctc agagtgctcc cttcaagcct cccaggccat gcaccggggc tcagcctgag   960

ttccacctcg ctgccggagc caggccctcc acggcacccc agtccccaga gccccgacag   1020

aggggtccct ggccacagca tggaggggta ctcagaggag gctagcttgc tgcggcacct   1080

ggagaaggtg gccagtgagg aggaagaggt accactggtg gtttatctaa aggagaatgc   1140

agcactgctg acagccaatg ggctgcacct gtcccaaaac cgagaggccc agcagtcctc   1200

accggcccca cctccagctg aggtccacag cccagctgca gatgtcaacc aaaaccttgc   1260

ctcgcccagt gccacgctca ccacaccaac ttctaacagc agccacaatc cgccagccac   1320

cgatgtcaat cagaacccac cggcaactgt tgtcccacag agcctgccac tttctagcat 1380

ccaacagaat tcctcagagg cccaactccc atctaatggc acagggcctg cttccaaacc 1440

cagcaccctg tgtgctgatg ggcaacccca ggcaccggct gaggaggtga gatgcagcac 1500

actcctaatt gacaaggtat caactccagc taccaccacc agcaccttct ccagaggagc 1560

tacgctcatc cccagctcca ggcccccagc ctcagatttc atgtccagct ccctgctcat 1620

tgacatccag cccaacaccc tagtggtgtc agcagatcaa gagatgtctg ggcgagcagc 1680

tgccaccacg cccaccaagg tctacagtga ggtccacttc acactggcca agcccccatc 1740

agtggtcaac aggacggcca ggccttttgg gatccaggcg ccaggggggca ccagccagat 1800

ggagaggagc cccatgctag agagacgaca ttttggggag aaggccccgg ctccccagcc 1860

ccccagtttg ccagacagga gcccccggcc acagagacac ataatgtccc gcagccccat 1920

ggtggaaagg aggatgatgg ggcagcgaag cccggcctca gagagacgcc ccttggggaa 1980

cttcactgca cccccccacct acactgagac cttgtccaca gcccctctgg cttcctgggt 2040

gaggtctcct ccctcatatt ctgtcctgta tcccagctcc gaccccaagt cttctcatct 2100

gaagggccag gcggttcctg ccagcaagac gggcattctg gaggagtcga tggcccgccg 2160

gggcagccgc aaatccatgt ttactttcgt ggagaagccc aaggtgaccc cgaatccaga 2220

cttgctggat ctggtacaga cagcggatga gaagcggcgg cagagggacc agggggaggt 2280

aggcgtggag gaggagccct tcgcactggg ggccgaggcc tccaacttcc agcaggagcc 2340

agcacctcgt gacagggcca gccccgcggc ggcggaggag gtggtaccag agtgggcctc 2400

ctgcctcaag tcaccccgca tccaggccaa gccgaagccc aaacccaacc agaacctctc 2460

cgaggcctct gggaagggag ctgagctcta cgcccgccgc cagtcacgga tggagaaata 2520

tgtcatcgag tcttcaagcc acacgccaga gctggcccgc tgcccatcac ctaccatgtc 2580

cctgccttcc tcctggaaat accccactaa cgccccgggg gccttccgag tggcatcccg 2640

aagcccagcc cggaccccgc ctgcctccct ctaccatggc tacctgcctg agaacggggt 2700

cctgcgccca gagcccacca agcagccgcc ataccagctg cgcccctcgc tctttgtcct 2760

ctcacctatc aaggagcctg ccaaggtctc accaagagct gcctcgcccg ccaggcccag 2820

ctccttggac ctggtgccca acctgcccaa gggggctctc cctccatctc ctgccctgcc 2880

tcggccctcg cgctcctcac cgggcctcta cacctccccc ggccaggaca gcctgcagcc 2940

cactgccgtg agccctcctt acggcggtga catctcccccc gtgtctccct ccagggcgtg 3000

gtctccccga gccaagcagg cccccaggcc ctccttctct acccggaacg ccgggatcga 3060

ggctcaggtg tggaagcctt ccttctgctt caagtaacga accccacggg ggtcccactg　3120

ccggtcaagt tcccctcctt gagggccaga tggagagcag atgtggcagg aaatggcaca　3180

gagctgagtg aggagaatgg ggagtccatg gttcaaggtc agatgtggcc accagctggc　3240

tttgtgacct tgggcgagtc gcctcccctc tctgagctga agccgcccct cccctactac　3300

aacaggggtc ggactccatg tctgagcggg gaggagggtc atggagagag aactgtctgg　3360

cagccctgat gcggtagagg ggcatcctct ggcctttgtg agctgtaggg atgcagagtc　3420

tgatgccagc gtcctgctgg gggagtggcc tagaagggga tcctaacagg gacttctgga　3480

gcagacagag cctgccagtg cctgtggagt cagccagccg agggtctgcc tcctcagctg　3540

ccccaggggg gcctccctcc tgaggctcaa gctcctggcg tctttcttcc tgttgctgga　3600

ttctcacctc catgggcctg tctcttctgc ctctgccttc tggacaccgt ttcctctccg　3660

ctgcttcaga gagctttgcc tcgcctccgc ctgcgctccc ctccagggtc cttctgctgg　3720

ctgcggactc ggcccaccac tgctgtctga cgcttttctt cctgccccct ctgaggcctg　3780

gctctgtttt agggagatca ctgggcccag gcctcagccc cagttctacc tggcttgctg　3840

tcaccgctct aggggtgggg gacgtcccag gggatcccca ggagaaggag agccctgtag　3900

ggggctgtgc agatgtgggt gtgccacagg gagggtggcc cctagccatg tatccattgg　3960

ctgtttttggc ttcagattca accaagatct gcctgactaa aagaagccac ctcagcgcag　4020

tggaacgggg cccagggggga ggcaggagag gagggttccg gtcccatgtc accttctcat　4080

ttgctgtgtg actttggccc actcacattc tctttgggcc tcagttttat catttataca　4140

aggagggctt ttctagctgt aacaatctgt gaggattgag aggataggct ggtgctttga　4200

agaaaggcct tgtaagtgac aagacagtcc cctgggaaga aagagaaagg aaatgggcta　4260

ttgccaaagg acaggtggcg ttagatggct gtgagggtga cctggtgagg gaagggttgg　4320

aatgagctgc tgcaggaggc caagggatgc ctgggctggg ctgggctggg ctggcttagg　4380

ctcaggattg cctgggggaca gtaggagcat ggcaggagct ggggcaggtg catagcagtg　4440

cagtgggaag ggacagagga gatcttagaa ttttgaggaa aatctgggac ttgagacctg　4500

gattctaaca gaccaactgc atgtgtgtct gtaggtctca gtttccacat tcatacagtg　4560

agggtgttaa gtcaggtagc tggagacttc ccatcgcctc tgacactttt ggaggtgata　4620

tgatacagcc cccgaccaaa ccaggctttg tgggggggtga gagaatacag acacaagtgg　4680

caggattcag atggaagctt cgcaaggctg ggggccgagg accacccact tctctttccc　4740

agccctagtt ctgggttccc cagtggggca aggggtggtg gaggcagtgc ccatgctggg　4800

ctgagcctgc agttttgtg agctctgggc ttgtctccat gggaacaggg gtgccttctt　4860

agtgagctca tttcacacag atcgagggg tatgcgtggg ggagttgtga gtgagctcag　4920

ctccttcagg cctggcctct cccagaacag agtgaagccc ctgccctgga ccctgctcc　4980

cttctaccct tgagggccac caatggaaga gcccgccctt cattctgcag ctcctgcggc　5040

caggctgagc tctgccccca actttgtttt ctctcatgtt ctcaatacac tctgcctc　5098

<210> 445

<211> 4946

<212> DNA

<213> Homo sapiens

<400> 445

atcctttcca aagtgtacct cgagcacagg tctcctgacg gtgccatcca ctacctgagc　60

caggccttgg tgctagggca gctgctgggt gagcaggaat cctttgagtc ttctctctgc　120

ctggcatggg cctatctctt agccagccag gccaagaagg ctttggatgt gcttgagcca　180

ctgctatgct ccctgaagga gacagagagt ctcactcaaa ggggagtcat ctataacctc　240

ctgggacttg cactccaagg tgaaggccgg gtgaacaggg cagccaagag ctatcttcgg　300

gccttgaaca gagcccagga ggtgggagat gtgcataacc aggcagtggc tatggccaat　360

cttggccacc tgagccttaa gtcctgggct cagcatccag ccagaaacta tctcctgcag　420

gctgtacgac tctattgtga acttcaggcc agtaaggaga cagacatgga attagtacag　480

gtgtttctct ggttggccca agttctggtg tctggacacc agctgaccca tggccttctt　540

tgttatgaaa tggcattgct gtttggctta aggcatcgac atctaaagag tcagcttcag　600

gccaccaaat ccctctgcca tttctacagc tctgtgtccc caaaccctga ggcatgcatc　660

acctaccatg agcactggct ggccctggct cagcaactca gggaccggga gatggaaggg　720

aggctgctgg agtccctggg gcagctttat cggaacctaa ataccgccag gtccctcagg　780

aggtcactca catgcatcaa ggagagcctg cgtatcttca ttgacctggg ggagacagac　840

aaggctgctg aggcctggct tggggcgggg cgactccact acctcatgca ggaagacgag　900

ctggtggagc tgtgcctgca ggcagccatc cagacagccc tgaagtcaga ggagcctttg　960

```
ctggctctca aactttatga agaagcaggt gatgtgttct tcaatgggac ccgccacagg 1020

catcatgcag tggagtacta ccgagctgga gctgttcctt tagcaaggag gttgaaggcg 1080

gtgagaactg agctccggat tttcaataag ctgacagagc tgcagattag cctcgaaggc 1140

tatgagaagg ctttggaatt tgccaccctg ccgccaggc tcagcacagt cacaggagat 1200

cagaggcaag agctggtggc ctttcaccgc ctggctacag tgtactactc cctgcacatg 1260

tatgagatgg ctgaggactg ctacctgaag accctgtccc tctgtccacc atggctgcag 1320

agtcccaagg aggccctgta ctatgccaag gtgtattatc gcctgggcag actcaccttc 1380

tgccagctga aggatgccca tgatgccact gagtacttcc ttctggccct ggcagcagcg 1440

gtcctgctgg gtgatgagga gcttcaggac accattagga gcaggctgga caacatctgc 1500

cagagcccc tgtggcacag caggccctcc gggtgctcct cagagagggc gcggtggctg 1560

agtggtggtg gcctggccct ctgaggaaag ctgtcctgtc tctggacatt tggcatggcc 1620

agactctgac cccactgccc taggctctta aatactcatt gggagggtcc gagtccttac 1680

ctggcctagc cccctcattt cacaagaaga agaatgaagt ccaggaggag aagggctcat 1740

tgcaggccac agaaagattt gatggtgcag cgatgagaat tcctggttcc aggctttgca 1800

tctggagcct ttaccggttg actgttgcct tccacacaaa cagcctctga aaagcacttt 1860

ctccatacat aattctggag aagatgaggg atcttgccct ccaggagcct tccttcctcc 1920

cccaatgagg aaatcagtca ctgcactggt gcaaaggcaa gcagattgga atttgtgctc 1980

ttcaccgatt ttctcaggga aagacccctt ccccttgcca gcagaggaac ctgtagtttt 2040

ttccatttct ttcttcagaa ccaaagtatg tatcactcct catgctcaca gggattgaca 2100

ggagagaatt caccaggatc ttagctcaaa agacacagcc tcagaatggc cagatggatt 2160

gcacgaaacc tgacttggat tcaccatctt cctcctgcca taaggctgtg ctcccacata 2220

acctcccaga agctccaggg aagctttcca agagcaaagg cttggaaatt gaatgttaag 2280

aaaattatga cataaattac atgtaaatag tgtatatgat taaatattgt ccagttacat 2340

ttacacacac attttgtctc atccacaatg ggggcagatg agatggagga cttgatggat 2400

gggagagaat accaatacat gtcttttttt tttttttttt ttttgagaca gtttctcctc 2460

tgttgcccag gctggagttc agtggtacag tcagggcttc ctgcgacctc agactccggg 2520

gctcaagtga tcctccagtg tcaacctcct gagtagctgg aactacaggc atgtgccata 2580

cccaactaca aggcatctta ttgatttcag ggcagctgct ttacaaagca tctctattaa 2640

taacatcact gcatagcaca ctgagtggcc taaaacactt ataatctcat ggtttctgaa 2700
```

gggcaggaat ccaagcatga cttagctgag cccaccagct tagggtggtt cacaggctgc 2760

aatcagctgg ggctgcagtt atctcaactt caactagaga aggatgggct tccaagctca 2820

cccacacagc tgttgttagg agtcagtttt ttgctagctg ttggccagag gcttcctgca 2880

gccacttgcc acgtgggcct ctccacaggg cagtcacaac atggcaccat gcttcactag 2940

agggagcaaa caagaggagc aagaaccaga gtgagcagga gaaaagggag tgactctttc 3000

tataacctga tcacagaagt gacatctcct tagtcttgcc tattcaattc ataataaatg 3060

agtcactagg tctagctccc acaagagggg agtgtttacc aacagcttga ataccagatg 3120

gtgaggaatc attggggatc atttcagaag tgacctacca cagtatctga gttctttgat 3180

aatgaaattg ggaattctct aatttcagca aactgaaaat atggtccact aaccagcagc 3240

atcagcatca cctgtgagat tgtttgaaat gaaaatctgt ggccccacct atgatctctg 3300

aatcagaatc tctggatccc agaacgctga ctcgtccaag ctttcctggt gattttaatg 3360

caccctaaag tatgggaagc accactgcag ggcaagagcc ctcagatagt gtgcataact 3420

attacctggt gaggttgtgg aacatgaact tcttggtttc tatctctaat aattctgatt 3480

cagtagatct gggatgtatc ccaggaacat gcatttttag aaagcaactc aagcaagcct 3540

gatgcaggtg gttcaccctt gctccttttc tgtgaaccac aaggatacca gccataattc 3600

cctgcatctg atgcccatca gcttagcttt tattatcaga ccatctgccc ttaatttcta 3660

gcttcttggg ctgaccagat gattggttgt atgaaagggt gagatgggag tggtgagttg 3720

agccgccatt gcatcttcta gtcatcaagg ttgtctacta attggcacac attttctctt 3780

agagatgtgg ttggttgtca aaaggctgtc tactctagag agtattctcc aggaaggaga 3840

agcttccagt tgtctaatta gtaaagttat ctaatctact accatggaga atagatgtgg 3900

ttttgccccc accacaagct gtaaaagccc caagctggga gggacgttgc ggttgaggct 3960

attcagtcta atctcccgtg catagtcctt tcaacaacat tcctgggaga cagtcagggg 4020

cacacacatt ccagaacagt tacatatcgt gtatttgaag aaggctcaca cagccctgga 4080

aaccatgcca ctggccattc cccatctgac tcaggttaca gatcccctcc cttttcccac 4140

tgaccactca ctctcctctg gccagatttg tttctgtttc tctgaaagag cagttcccac 4200

aactgcatga ggcttttgat attggccggt gggtgaagag tacagaggga tgttactata 4260

cttaatttga ttcttcctct ccccagcagc cacatctgtc cttggcttcc attgagcttt 4320

ataatcagtt gaaacttctg tgtcttctga cttgaacttc tgtttggaca gatctttctc 4380

aattgctgca aatatgcaca tgcatttgca tatgcataca catacacaca catacgtgaa 4440

gagcgttgtt tctatccatg ttacatctcc ttggaaattt tagctaaaat ttcccaattc 4500

tgtgcacttt gatttaccta taaatctgat gaatttaccc ataaccaggt cagttataaa 4560

aatgtttagc atgtttccaa agacaagggt aagactattt ttttaaaata agaaaaacat 4620

tgtgctatat aattgcaatt actacattct atatgtaaac cgcttgctaa aactctttta 4680

aaaagtgttt aaaattttca tttttgaaat gtgggccaac tattcccttt ggaaacatgt 4740

tgatgctgtc ttttttttcat gatccacaga gagtaaagtg gtgattggat ttggtctcta 4800

cttaaacatt taaaaaaata agtgtatcat agccaaacat gatctagtta ccctctttat 4860

tctaattgtt ccctcaaatc ttatatgggc tgtgtgactg ctggctcctt acatctaatc 4920

taaataaaga acaagaaggg cattgc 4946

<210> 446

<211> 4719

<212> DNA

<213> Homo sapiens

<400> 446

atatgatgcc catcagagtg cttcgtctag gtgggatcag gctttcaaga gtccatggga 60

acatgcaggg ttagctatat gattactggt aaggccgagt ggtccctggc ctcagacttt 120

aggcatttct tttgctctgg tgctctgtcc cagcagcagt tcctttctc tgttttttgg 180

gggaaacaga gatacacagt tttcatttct gaatcttcaa agggagagag agagaaggat 240

ccctgtggcc caaacaggct tcccttgcct ttgggctgtg cttggtcttt gattgaagat 300

tctcatagga gtagaaggga atgtgcttgt ggggccctgg ggagcaagtg cctgcagaga 360

tggggtctgc ccagtagctg ctcaccccca ttccatggat ctggcctggc atgggagcag 420

agctgctggg tttgttcccc tgccctttac atcccttgag gggggcagtt agaagcatag 480

gactgctttc catgagagcc tggcatggaa ttgggggctg atcctacttt ctcaccttct 540

gtttcagtga catcccggag actgtgcctt tgtccactgt caatagacag tgttcgtcgg 600

ggctacaggc agtggccagc atagcaggtg gcatcagaaa tgggtcttat gacattggca 660

tggcctgtgg ggtggagtcc atgtccctgg ctgacagagg gaaccctgga aatattactt 720

cgcgcttgat ggagaaggag aaggccagag attgcctgat tcctatgggg ataacctctg   780

agaatgtggc tgagcggttt ggcatttcac gggagaagca ggataccttt gccctggctt   840

cccagcagaa ggcagcaaga gcccagagca agggctgttt ccaagctgag attgtgcctg   900

tgaccaccac ggtccatgat gacaagggca ccaagaggag catcactgtg acccaggatg   960

agggtatccg ccccagcacc accatggagg gcctggccaa actgaagcct gccttcaaga   1020

aagatggttc taccacagct ggtgagactg gtccggggta ggggtatgag aaagcaggcc   1080

atggccatgc tgggtgctgt actctgggaa cctggaatag accaggcccc tctgcaaagt   1140

agaagtggga gggctgggat ctcctcatcc ccacccctgat gccttcttac cccaacagtt   1200

tgcccctagg aaactctagc caggtgagtg atggggcagc tgccatcctg ctggcccgga   1260

ggtccaaggc agaagagttg ggccttccca tccttggggt cctgaggtct tatgcagtgg   1320

ttggggtccc acctgacatc atgggcattg gacctgccta tgccatccca gtagctttgc   1380

aaaaagcagg taaggtggct ccttcatata gtatctgggt cccacctgga tcctgcagct   1440

gccctgcatg ctgttgccag gggcatgagg gtggtcctgt gggtgctgca gagtggaggt   1500

ggggcaggct agtgtcccat acttcaagcc cttcctgacc ccacagctgg gattggctca   1560

cccttctgga agagacacac accaggcagc ctgtaggccc atggatgggg tgggccccag   1620

gggaggcaga gggccagtgt gtcagctcag gtctttacct tgtctgcagg gctgacagtg   1680

agtgacgtgg acatcttcga gatcaatgag gcctttgcaa gccaggctgc ctactgtgtg   1740

gagaagctac gactcccccc tgagaaggtg aacccctgg ggggtgcagt ggccttaggg   1800

cacccactgg gctgcactgg ggcacgacag gtcatcacgc tgctcaatga gctgaagcgc   1860

cgtgggaaga ggtaaggctt tgctcctggc ggtggggtca taggggata tccaagttag   1920

ggcacctgaa gggcagggga tagaggtagg tgggctttgg atcataatct cgacagacac   1980

agtcctgagc accataatcc caaatgttga aatcccaaaa gatcaaagtc cctaaggtct   2040

tggctggtcc agaggtagtg agttatcttg attgttcagt tacagatcaa actccatgtt   2100

ctactcttta cccccttctt acttctacac ttgactagtc aaggagaaaa atccttactg   2160

tctaaaatcc caaaaatcac aatctcaaaa gattaaaatc ctgaatgttg aaatcctaat   2220

gttgaattca tgttatgaat ctagggaag ggattagtgc attttccgct gtatgcagga   2280

tagtgcatca tattagttat accatgtaac taatatgatg caaccattac cttgttattg   2340

tctttatttg aattaagtat ggtttaagga gatgtgaatg ggtgctaagt tgacaaggaa   2400

tggacttaat tttgggaata cctagaaacc tgacaaagca ttgctttggg tgtgtctgtg   2460

acggtgtttg cagaggaggt tagtgtgtgc atctgagtgg accaggtggg gaagatccgc 2520

cctcagtgtt ggcaggcatc agctaattgc ctggggccct ggagagaaca aatacagaag 2580

gtgaactgtc tctctcagag ccgggacaca ctttttttct gccttggaca tcagaaattt 2640

gattccatga aagtgcatta tcacattgac tttgtaagcc ttgtgcatgt acataaaaat 2700

gttgaaactt cctcagtaaa agaggtgtgc tatttgtgca cctgcgtttg tgaaagataa 2760

aatttctcaa gatcttggtt ctttggttga ctacttgtgc agtggtgacc catcacaggt 2820

tggtttgttg agacagggtc ttactcaggc gcccaggctg gagtggagtg gctccatctt 2880

ggctcactgc aacctctgct tccctgactc aagcaatcct cccacctcag cctcctgagt 2940

agctgagact acacgtgggt gccaccacac ccagctaatt tttcgtattt tttgtagaga 3000

cagggttttg ctatgttgcc caggctggtc tggaactcct gggttcaagt gatcttccca 3060

ccttagcttc caaagtgctg ggattacagg tgtgagccac agtgcctggc tctatcagtt 3120

tttgatcaat ctcatcaaaa gacgtaggtt gtccatcatg gtattcatat gactgcagtt 3180

ataaagctgg gtgcacatga ttaccagcaa tttatacagt ttgcttttaa cctatttatg 3240

aatacagttt gtctgtttat aattgttata atcctgtgac tattgttagc atacctgagt 3300

gtttatgctt gcagaaattt gtaattattt tctatttttat tgtgtaaagt agcctgtgaa 3360

gtgttctgtt gttttttgttt ctcaaataaa tcccctttta aaaatgtaca ttttttttttt 3420

ttttgacatg gaatctcact ccgttgtcca ggctggctgg agtgcagtgg tgtgatctcg 3480

gctcactgca acctctgcct tttgggttca agcaattttc ctgcctcagc ctcagcctcc 3540

cgagtatctg ggattatagg tgtctgccac cacacccagc taattttgt attttttggtg 3600

gagacagggt ttcaccatgt tggcgaggct ggtcttgaac tcctgacctc gtgatcctcc 3660

cgcctcggcc tcccaaagtg ttgggattac aggtttgagc caccacacct ggcctaaaaa 3720

tgtaaatatc ttttaaatca atcttttaaa aaagttttttt tctaagatgg ggtcttgcta 3780

tattgcctag gctggtcttg aactcctagg cacaagtgat cctcttgcct cagcctgctg 3840

aatagctggg actacaagta gatgccacca ggccaggctt ccaaattatt ttttccagaa 3900

ttatattttc aggattttga tcttttagga ttgtgatttt caggatttta gactttaggg 3960

attttgttct tccaggattt caacatttgg gatgattgtg tttgggattg tgtctttttgg 4020

gattatgatc gatccctggg gaggggaaca tgcacacaga aacaccctga acttaggatg 4080

taggggcatg atccctgttt tccttaaggg ccagccttga aagggatact agcctgcagt 4140

gggcatctgt caccgtgtgt gtgcccaagt gggaggccag ggtaccgctt gcccacagat 4200

ctggtctgat ggttttgcat cctacttgtc catgacgtcc ttctgggtca gcctggtctg   4260

gaggtaattt ggtgggtgcc tttgcccagc caattaagtt ttgttttcac agggcatacg   4320

gagtggtgtc catgtgcatc gggactggaa tgggagccgc tgccgtcttt gaataccctg   4380

ggaactgagt gaggtcccag gctggaggcg ctacgcagac agtcctgctg ctctagcagc   4440

aaggcagtaa caccacaaaa gcaaaccac atgggaaaac tcagcactgg tggtggtggc   4500

agtggacaga tcaaggcact tcaactcatt tggaaaatgt gaacactgat gacatggtat   4560

aggagtgggt ggggtgttga gccacccatc agacctctt tagctgtgca agataaaagc   4620

agcctgggtc acccaggcca caaggccatg gttaattctt aaggcaaggc aaatccatgg   4680

atgagaagtg caatgggcat agtaaaagtg catgaattt   4719

<210> 447

<211> 3500

<212> DNA

<213> Homo sapiens

<400> 447

tattttagt agagaccggg tttcaccatg ttgcccaggc tggtctcgaa ctcctgacct   60

caggtgatcc acccacctca gcctcccaaa gtgctgggcc tacaggtgtg agccactgca   120

cccggctgag acaaaatctt ctagactgca aagttacgct cttttcacga agtccttgcc   180

cacctgccca gggtcccttg ggcctgcttt ttgtcccccg ggtggggtgt aacatcccag   240

ctggcttgag tcagggcaag gcacgggtag gggtgaagtg ggtagtgggc tgcctgcttt   300

gaggggagca ggggtcaagg gtgtgcctaa ggcttgcatc ccgccctctg ggcacagggc   360

ctgtgcttgg ggtgagagcc tgtgctgtgg agcaggaacc agcattgagt gggggccacc   420

tggtgtgtgg ggctgggctg gtcccttcat gtgggaattt gatcctctta ataacactca   480

gcgggaaaga ctatattgtg cccatttac aaatggggaa actgaggttc agagatgcgg   540

tacttgccca aggccacact ggtgcaggga cctgaacgca gcagtgcagc tccaaggtct   600

ctagctgtcc tctggctgca tggcccactt cagcatgagg gctgagtctc caagggcagt.   660

cccaagagaa ccagcagaca ctgtctcacc atttgtgacc cagcctcaga agccacatag   720

```
catcacttac ctggagtggc acgcaagcct gcctagagtc aagaggaaga aaggaaaccc   780

caactctcag cagaattgcc agaatctcca tgtcagaaga gcacgtttgg aggcagatcc   840

tgctgccatc cacttcgcag aatgcagagc gtgcccgagg agaagtgggg tctgggtgag   900

cagcaccaat gtccactcca gtaggggaga cactgcatgt ccaggacaca acctctgatc   960

gaggctgtca ggggggcccaa agaagggctg tggggggccgg gcatgggagc cacagatgcg  1020

ggttcagctc caggctctgc tgctcccttg cctacatgga tggagagccc tctgggagaa  1080

gatgtgcccc cgccagcctc tgaaaggaag atgaggttta gatgaggagg ggaggttgga  1140

aggagctctt ggctggggac cctgccccac aggggcacct ctaggggtgg gagatgaaag  1200

cagtgtgctt ggggcacctc agatgccgtg gagatgaggc tgggctgaga ctcagtcaga  1260

gggttcccaa gtggtcccag tgacaaaggc ccagagaaac agttccattc aggaaacatg  1320

tgatggctca atgtggagaa gacactcagg aagtccacag agcctgaatg tccccgctct  1380

ggtgcagggt ctcgtgctca ggtccgacct ggctgtcagc ggcactggga cccagggctg  1440

ccccgccatc ccaccgccag gagcggagga gctgtctcca gcagcagctg ctgcacagag  1500

ccccaggtgg agcctgggga ggcaggctca gtgttctcag cttatcacca gacactcagt  1560

tctgcggctc attagtctag acttgtttct gtcagagaag gtcctctttc ccctgggatg  1620

tgtaggctgt tctggctcag ccaacagcag tatatgggtc ttatcggaat atgaaatact  1680

aaaatgtggg aaaaaaaaaa caaactttta agtgtttgcc ttggagggat gggcaatggg  1740

actcgtgaac tgttttcttc tttcgtaagc agcctcgcta tcccttgcag ccacagaact  1800

gacgcacagg gccaggtccc ttggggccca gcaggaaaaa tggatgccag gaagggcatg  1860

ctagtccagg cctgggggaac acaagctgct tcccatttgc tctctctcta cggctcgatt  1920

gccagttcca actgtcagtc tatcttgatc cccaaaatgt ttgagtatag atacgtctgc  1980

tgattcccct cattctttta gtgtcttttc tgctgtgaag cagtttggg gcaagatctt  2040

ttgctctggt ccggataact ctgggcaata tactccaagt caaaggctac agtgaatctg  2100

ggtgactggc aaataatcga tgaatcatga ctccagaatt cttgtctcta gatggggggag  2160

taaaatcaca aacgagatat gctgtcggct ggggatgctt tagaggcccc accatacatg  2220

ttcccatctt taataatgaa acccttgatt tttagctcag cgtgtggcta cctggaccaa  2280

ttctgtctga tggggtgtgc agtagtgtca tgaactactt ctatcccagg aagtaacttg  2340

taaatgagtg gatgagccaa ttctccttct ttttcttcct gctggctgaa gtgtggacat  2400

gatggcagga gctgcagcag tcacattgga ccatgggtca tcgtgggaat ggaagtcaca  2460
```

caagggtatt taaagccaca caaggataat gagcactgga tagatggagc ccgagtcccc 2520

atcacagtgt agcccctgta acagatctag acttcctgcc tcccacattg agtaaactgc 2580

tctcttgctt aagccactat tatgttagga ttttttcaac ccatagtcag agatagtcct 2640

aactgattca ccaccctcag agagtttaca gccaattatg tttctcatga aaaaggttag 2700

ccagtggttg taagtgatcc cggactggag cgccagctgc actaaggcag ttcgtctgtg 2760

ggatggctct gtccttgtca gggagaggac ccctcctaca cactggcatg ttaccacaag 2820

tacagtggta actaagcagg tcggcatagg tgcccacaga gcagactgaa caccccgttt 2880

gcttccctct cctctccgaa ctccctggac atggccaagt agcataagcc aagcagaggt 2940

gagaaggaga gtggggcaca ggcaagttac cagtgggccc gcggctatca tggacttcca 3000

gaaaataaaa aacaggcatg atggtgttgg tttataaacc aaagcagagg gcactggagc 3060

cccgtaagtg tgcaggagtg aatgtatgtg gcagggagaa gggtagaagg gaggaggttg 3120

ggtagaaggc tacctctacc agctggaaat gagtggtgaa gtcagctgga cttctgggtg 3180

gggcggggac ttggagaact tttctgtctt acaaagggat tgtaaaatgc acaaatcagc 3240

actctgtaga taggattgta aaacgcacca atcagctctc tgtggctagc tagaggtttc 3300

taaaatggac caatcagtgc tttgtaaagt ggaccaatca gcacactgta aaatggacca 3360

attagtgctc tgtaaaatgg accaatcaga ccaatcagca ctctgtaaaa tggaccaatc 3420

agcaggacat gggtgggggac aaataaggga ataaaagctg gccaccctcc agtcagcagc 3480

aggcaacccca ctgggtcccc   3500

<210> 448

<211> 3943

<212> DNA

<213> Homo sapiens

<400> 448

ctgtcttcag gatttggggt gttctgcaat tctttaccct ggctctgaac cccagctgtc 60

aattctgggg caaatggaaa agttcctgct gctatcctgt tccacctata accccagcct 120

catgttacag tcctggcaag tgctacaaag ggcagggcag agaatgttct gatctcatct 180

```
gggggtgctc tgaggaagtg acttttgtag gtcagaccag gtcaaaagaa tggcatgtcc   240

caaggtccca aagcaagaag cagtgtggca catggggaga tgggaagacc ggtgggtgtg   300

gggtgttgag actgagggca gagcggtaag agttgaggct ggcggtggcg acagtggcaa   360

cagcaacatt tatagatcat ttctgtttat gcatttctta tttaataatc gcaaaagagg   420

aagtagctct gattatctct cttttgtaga tggaggttca catcttgctc agagaggtga   480

ggcgattcac ctgagagcac gcagcaggtg tgtggggaag ccgggttttt tgttttttat   540

tttttgtttt ttttttttttg agacggagtc tcgctctgtc gcccaggctg gagtgcagtg   600

gcacgacctc ggctcactgc aggctccacc tcctgggttc acgtcattct cctgcctcag   660

cctcctgagt agctgggact acaggtgcct gccaccacgc ctggctaact ttttgtattt   720

ttggtagaga cggggtttca ccgtgttggc caggatggtc tcaatctcct gaccttgtga   780

tccgcccgcc tcggcctccc aaagtgctgg gattacaggc gtgagccact gtgccttacg   840

gaagctgggg ttttaacctg ggtccagagt tggaactggc ctctgggcct atttgactct   900

cctgtgctcc gacatcccag cagacccaag gaaggggcag tctgtcctgc ccctacccac   960

cccttctccc tttctactgc ctactcctgg gagcctgtat gaggggctga ggtgggcatg  1020

aacaggtcag cctctgagac aaaggaggcc tgattggcaa gagaagtaag gcctttgctg  1080

tcagcaggcc tgggttttag tccccacact gcccctcact gggctgtgtg actctcggtc  1140

agattcttcc tttttctctg attgtcagtt tcttcatttg tcaaataacc caccctcctt  1200

gagagtgtcg ttttattccc attttacaga tggcccagag aagggaagca agacagtggc  1260

acccaggagc ccagcaccaa gcccagggct gtttccccta cacctggcca tcatctttcc  1320

aggggtctgg gcagtgccag tccaagggga ctaattgtag gcaatgtgga tggttttgt   1380

agaggcccag acttctaaag acaggcggtc caggggctct catgatagga gaatgggaat  1440

ggccaatcca aagaagagaa agcgcgacca agaactggta ttcagattgg gtggcccagg  1500

ggctctcatg ataggctggc tggagagagt tgcagactga gcccctccct gtccctgcac  1560

tcatctctgg gcctgcctga gagctgattg tgctgcggcc gcatctgatc tgggcagact  1620

ggtccccgca gacaccagcg tccatcaggg ccacagcatt tcccagggcc acatacctag  1680

atctctgctt cccacgtgcg tgtgcgtgtg tgtgtgtgca tgcacatgtg tgtgtgccta  1740

catgtgtgtg cgtatgtgtg catgtgtgtg tgtgtacgtg cgtgtgtgtg cgtgtgcgcg  1800

cgtgtgtgtg tgtgtatgtg ttttgggtca gggaggggggc tgagttagga agtctggagc  1860

acagcactgc agcagggggtg ggggctctgt tgaggtgtgt ctttgccctc actgggcttc  1920
```

tcctgcctca ctcccactct gggcacagct cacactccag gcctgagcag atggggggccc 1980

tgaccaggga tgcctgagcc ctgatggtcc tcaatccact ctcagatgca gattcacatc 2040

tctgagcccc agcctgagct gaaccctgac tctagttcta agctgagacc caaagctgac 2100

cctagagtga gcatgacccc agctccatgc ttagccatga tcatagtccc agactgagcc 2160

ctaatcctgg ttccaggatg gatcctcaat ctggttccag gctgagccct gaacttgctc 2220

taaaactgag ccctcgtctt ttagacaatt ctttgaaccc tgttccaggc tgggccctta 2280

ctatactcta aactctaatc ctggccccta actaaacctt gactccgatc agaaattctg 2340

tcatgattca cttctatttt gtttatttta ttttatttta tttttgagac agagtctcac 2400

tctgtcgccc agcctggagt gtagtggtgt gatcttggct tgctgcagct ccagcctcct 2460

gggctcaagc tatcctcctg cctcatcctt ccgggtggct gggaccgcgg gcatgtacca 2520

ccatgccctg ctaattttat tttttatttt gtagagacgg ggtcttacca tgttgcccag 2580

ggctggttct gaactcttgg cctcgggtga tctttctgcc tcggcctccc aaagtgttgg 2640

tattgcaggt gtgagccact gcatccggcc atgactcact tttaatttca gtcctgacct 2700

ccgtccttag ctgatctgtg cctgtgacca cagtctaacc cctaatttcc gaacaacaaa 2760

ccaaccgtta acctcaaacc tagcccaaat gggagcgcaa gatcccttcc aatggcagga 2820

cttgtgctgg aaccagaagg aaagttagtg tttcaccgag cggagctgtg gaaactgtgc 2880

acataggcgt ggagtgggaa tgtggagaat ggaaatggcc aacccgagaa gagaaagagt 2940

tactgagaac tgctatccac ggtgggagtg ggcgtggcgg gaggactctg ggtgcagtca 3000

cagctggggt tcaaatctag ggtccaccgc atatcagtaa ccttattttg gatgggtcag 3060

gtgtgtgtgg ggaaaagaaa gagagatcag attgttactg tgtctatgta gaaagaagta 3120

gacataagag actccatttt gttctgtact aagaaaaatt cttctgcctt gagatgctgt 3180

taatctgtaa ccctacccc aaccctgtgc tccctgaaac aagtgctgtg tcaactcagg 3240

gttaaatgga ttaagggctg tgcaggatgt actttgttaa acaaatgctt gaagacagca 3300

tgctccttaa gagtcatcac cactccctaa tctcaagtac ccagggacac aaacactgcg 3360

gaaggccgca gggacctctg cctaggaaag ccaggtattg tccaaggttt ctccccatgt 3420

gatagtctga aatatggcct cgtgggaagg gaaagacctg accgtccccc ggcccgacac 3480

ctgtaaaggg tctgtgctga ggaggattag taaaagagga aggaatgcct ctttgcagtt 3540

gagacaagag gaaggcatct gtctcctgct cgtccctggg caatggaatg tctcatgtaa 3600

aacctgattg tatattccat ctcctgagat aagggaaaac tgccttaggg ctggagttgg 3660

gacatgcggg cggcaatact gctcttgaag gcattgagat gtttatgtgt atgcatatct   3720

aaagcacagc acttaattct taaccttgtt tatgatgcag agacctttgt tcacctgttt   3780

acctgctgac cctctctcca ctattatcct atgatcctgc cacatcccct tctctgagaa   3840

acacccaata atgatcagta aatactaagg gaacccagag gccggcgtgg atcctccata   3900

tgctgaacgc cggtcccctg ggcccccttt tttctttctc tat   3943

<210> 449

<211> 3673

<212> DNA

<213> Homo sapiens

<400> 449

cttaagagct gaggaatgac acttatgcct ataaaactaa ctgcacatat aggatagatt   60

tttattattg aagagggatt tggtttaacc aaagctaaat cattcttttc aacctgtttc   120

tttttaatag tagatcttgg acatttcttc tatgtcggta cttacagatc taccttatta   180

tctttagtag ctatttagta ttccatatac atgtatgtat ggcctataat ttatttaaca   240

attcccctgt tgctggactt acagattttt ttttttttcct ttttttttttt tgagacggag   300

gctcgctctg ttccccaggc tggagtgcag tggcgcgatc tcggcccact gcaaactcct   360

cctcccaggt tcaagcgatt ctccttcctc agcctcccga gtagctggga ctacaggagt   420

ccgccaccac gcctggctaa ttttttgtatt tttagtagag atggggtttc tccctattgg   480

ccaggctggt ctcgaactcc tgaccttgtg atccgcccgc ctcggcctcc caaagtgcta   540

ggattacaag cgtgagccac tgcgcccagc caacttacag atattttttta aagcagattt   600

cactatctgt tctaggtgat catttttaca aatgatactg cagtgaacat ccttgtgcat   660

atcttctttc acatttatgc ccatatgttg gatacatttc tagaagtaga ctatatgtta   720

catgcatgag aaattgatta gtactgttaa atgcccctcc aaaagttgta tcaatttata   780

cttcattgaa taggggactt gatttggtat ttatggacag gagcctaggg atggattgta   840

gggaatgcat ttccctgaag agatggtcct tagctttcag cagttctgg aaactgagtg   900

gtgagaataa taatgtgaga aatccggaac actgataatg tcctgtttcc taatcggtct   960

```
gtgcccctgt gtaatttact cattatacgt gtccgtgtca cagtacctgg aaagttctct 1020

ccgtttcctt tctcttgggc aggaatgaaa gggttttgga ggcaatgaca gaaagagctg 1080

agatggatga agtggaacgt ttccagccgc tgctggatgg attaaaaagt ggaaccacta 1140

ttgcactgaa ggcatgtata tcccctgaaa ctgggcccaa gaatagaatt caagatggac 1200

agacttaaat tcatttgacc ttttaataaa atacatggag tgcctcccaa ctatatattt 1260

tacatttcag aatctgttat gaagggaaaa tgattaacct tctttctaag aaggtaaaga 1320

atgaactgtt ttcctcatta tgagatggaa aaggcatgat atctatttac aatctaggaa 1380

aaccaagacc tacaataaca tatactctca aatccttgaa accatttaga gtttaggctc 1440

tccggatctg tactcaaacc aggtctcatt gctatagtag aaaagtcatc tttagagttt 1500

ttgtattgta tctttcaggt tgtattgggg acctaagaat gcatgtaaag aaaatggatt 1560

cttgatctcc aggagttagc attgacatag ctgctgaatt ttcttatttt aggttggatg 1620

cctacagctg atcaatgctc tcatcacacc agcggaggaa cttgacttcc gagttcacat 1680

cagaagtgaa ctgatgcgtt tggggctaca tcaggtgttg caggtaagat attacacttc 1740

attagaaagg ctagactggt tccttcttgc tctacagccc caataatccc ggggataatt 1800

ctggttttca attaaaaacc aggttgaaaa gcttaggttt ctaaccacag aggatacttt 1860

tgggttccct gacttctact tttgttgttg acaggacctt cgagagattg aaaatgaaga 1920

tatgagagtg caactaaatg tgtttgatga acaaggggaa gaggattcct atgacctgaa 1980

gggacggctg gatgacattc gcatggagat ggaatatcct tttgctgact aggttcaagg 2040

cagatgagac attcattgta tttagttccc tgatccctgt gtggaatggt ttgggagatg 2100

atgactcaga acagagcatc aggcttatgt gtcttctcat taaataaggc aggtgtattt 2160

ttattgcgct ggctttactt agcttatcat agatcaggga agtcagtaaa ggtgatctga 2220

gggttgttga gcatggaagc catcaaaatc agtgtaaact tcctagaatg tgatagctta 2280

gcttactaag atgtagaact ggcttttaga gatgtttgga ctgacagagg gagtaattta 2340

gttacctgtt aatattttca gtaagtgact ttgaggcagt tacctcttat tttctgtcta 2400

ctgcctgatc ttcaagccaa gtacttacta ggaatcctct gtgtgtatag taccacccaa 2460

ttcactggtc ccttaaagga cgttttagaa agcttaaagt ttctggtgat gtttacagga 2520

agaacagcca gtagaatgga agtggtgtct tgctactttt ccctagcttt ttcaagagtt 2580

aaataagcca cctgtcaaac ataatttctg catatttgct ttccttagcc tatttccctt 2640

ttccactgac tttaatgaag tctttcagat tctcttaaac acagtgaagg attcaaaggc 2700
```

```
agagccacac ttcctttcca tcctgcagca cttactcttg gtccgaaatg actatgaggc  2760

caggtaagat gctgtgctta tgagaagttt tgaatttgag cctaagtgga gagagtgaat  2820

tccttaaatt caaagattgt tctgtaaaag gaaaatgtaa agacaaagac ccaagattag  2880

ggttcattag tcaccgatat aaaggaagtt gtcttatttc tttaatccaa ctcaaaggca  2940

tccctatggc agaggtcaga gtgtataagg tgaaatgccg ttctgttttt ggaggggagt  3000

aggtaaatag gatgaagatg ttagcaaaca gaagtggcaa tttaaaattc tttctagttt  3060

cctggaagta tagatttagc aatagcacta tccatcacag gaaggatcaa acgcaaattt  3120

ttagatggga aagtattggc actaggagcg gatggcaaga agttttgatt atttgaagta  3180

gatagggtag ggtagctgat gtggaaaaag gagttttctt agcatggcag caatacttgt  3240

gttaacttta caaaagtttt tccaggtctc tcagttgtca gagcaattac gttttcttgg  3300

tcctgaatac ttctgaaaat tatattttga ttttcctttg atgaccctgt ttttattctc  3360

ttgtagacct cagtactata agttgattga agaatgtatt tcccagatag ttctgcacaa  3420

gaacggggct gatcctgact tcaagtgccg gcacctccag attgagattg agggattaat  3480

tggtaagcat actcttctat ctggctcctc caagtattgc ttcttccttt cattttgcat  3540

cttgtttcag tgaaaatgtc agagaagata cctttccagt ccccagatag ttctattttt  3600

gtcctttctt aggtcataac cagcatcttt gctaggaatc tataggtctt tagtttattt  3660

ttagataaag cac                                                     3673
```

<210> 450

<211> 3544

<212> DNA

<213> Homo sapiens

<400> 450

```
atgatttgta aatcaaacca ggatgcttga agatgaacct tgtggggttt tttttgttgt    60

ttttttttaa gagacagagt ctcactctgt cacctaggct ggagtgcagt ggcacgatct   120

cggctcactg cagcctccgc ctcccggttt cacgcaattc tcctgccccct cagcctcccc   180

agtagctggg actacaggcg cgtgctgcca tgcctggcta atttctttat tttctttttt   240
```

tttgagacag agtttcgttc tttttgccca ggctggagtg caatggcgcg atcttggctc　300

actgcaactt ctgcctcccg ggttcaagca attctcctgc ctcagcttcc cgagtagcgc　360

catcacatct ggctaatttt tttttttttt tgagatggag tctcactctg tcgccaggct　420

ggagtgcggt ggtgcagtct cggcttactc ccgggttcaa gtgatgcttc tgccccagcc　480

tcccgagtgg ctgggatgac aggcgcccgc caccatgtcc agataatttt tgtatttta　540

gtagagatgt ggtttcactg tgtcttgaac tcctgacctc atggccaggc tggtcttgaa　600

ttcctgacct tgtgatcgtg acctcatgat ccgccagcct cggcctccca aagtgctggg　660

attacaaggg tgagccacct cacccagcct aattttgtat ttttagtagt gacggggttt　720

ctccatgttg gtcgggctgg tctcaaactc ctgacctcag gtgatccgtc tgcctcggcc　780

tcccagggtg ctgagattac aggcatgagc caccacgcgc gacctggcta atttctttg　840

cattttagta gagagagggt ttcgctgtgt tgcccaggct ggtctcgaac tcctgagctc　900

aggcaatctg cctgcctcag cctcccaaag tactaggatt acaggcacga gccactgcgc　960

ctggtcagcc ttgtggtttt tcacactgaa agggtatgtg gtggtgtgga ctgatgtgac　1020

aggaagacca gttaatttgt ggactctcac ttaaataaag ttaccttgaa gtagtatgaa　1080

tacaggcttt ttgtaattta ttttaactta atatgaagaa tatttattcc ttgagaagca　1140

acctaaggca ttaaataggg cttgctcttt gcaaaaagtc agtagcattg tttctgcttc　1200

tctctcccag atcaagcact gcgcctagca gaaattttac tacctctcca aaatcatcag　1260

caagtcccta ttcctcagtg tctgcctctc tcattgcaaa tggtgatagc actagcacct　1320

gtgggatgca cagttccggt gtcagcaggg gtggatctgg cttttctgct tcgtataatt　1380

gtcaggagcc accatcctct catatacaac ctgggctctg tggacttgga aacctgggaa　1440

acacctgctt catgaactcc gctttgcagt gtttgagcaa cactgcacca ctgactgact　1500

actttctcaa agatgagtat gaagccgaaa tcaacagaga caaccctctg gggatgaaag　1560

gggaaattgc agaagcctat gctgaactca ttaagcagat gtggtctgga agggacgccc　1620

atgtggcacc tcgcatgttc aaaactcaag taggacgttt tgctcctcaa ttttctggct　1680

accagcaaca agattctcag gagctgctgg cctttcttct agatggattg catgaagatc　1740

tgaaccgggt aaagaaaaag ccctacttgg agctgaagga tgccaatggg cggccagatg　1800

cggtggtggc aaaggaagcc tgggagaatc acaggttgag gaatgattct gtgattgtgg　1860

atactttcca tggcctcttc aaatctactt tggtttgccc agaatgtgct aaggtttctg　1920

tgacctttga cccatttttgc tatctaacgc tgccactgcc cttgaagaaa gatcgagtta　1980

tggaggtttt cctggttcct gctgaccctc actgcagacc tactcagtac cgtgtgactg 2040

tgccgctgat gggggctgtg tccgacctgt gcgaggctct ctccaggctg tctggcattg 2100

ctgcagaaaa tatggtggtc gcagatgtgt ataatcaccg attccacaaa attttccaaa 2160

tggatgaagg tttaaaccac atcatgcctc gggatgacat tttcgtgtac gaggtctgca 2220

gcacttccgt ggatggctcg gaatgtgtca cgcttccagt ctacttcagg gagaggaagt 2280

ccaggccatc aagcacttcc tccgcatcag cgctatatgg cagccacta ttgctttctg 2340

tccccaagca caagttaacc cttgagtctt tgtaccaggc tgtttgtgat cgtatcagcc 2400

gctatgtgaa acagccttta cctgatgagt ttggcagctc acccttggag ccaggggcct 2460

gcaatggctc caggaacagc tgtgaaggag aagatgagga agaaatggag catcaggaag 2520

aaggcaaaga gcagctttca gaaacagaag gcagtgggga agatgagcca ggaaatgacc 2580

ccagtgagac cacccaaaag aagatcaaag gccagccctg cccaaaaagg cttttttacct 2640

tcagtcttgt gaactcctat ggaacagctg acataaattc acttgcagct gatggaaaac 2700

tacttaaact caactctcga tctacactgg ccatggattg ggacagtgaa actcggagac 2760

tttactatga tgagcaagaa tctgaggcct acgagaagca tgtgagcatg ttgcagcctc 2820

agaagaagaa gaagaccaca gtggccctga gagactgcat cgagctcttc accaccatgg 2880

agacccttgg ggagcatgac ccctggtact gtcccaactg taagaagcat caacaggcca 2940

caaaaaagtt tgacctatgg tccttgccca agatcctggt ggtccacctc aaacgtttct 3000

cctacaacag atactggagg gataagctcg acacagtcgt agaattccca atcagagggc 3060

tgaacatgtc cgagtttgtc tgtaacctgt cagcaaggcc ttatgtgtac gacctcattg 3120

ccgtgtccaa tcattatgga gccatggggg ttggccacta cactgcatat gcgaagaaca 3180

aactgaatgg taaatggtat tactttgatg atagcaacgt gtccctggcc tctgaggatc 3240

agatagtgac taaagcagct tatgtgctat tttaccaacg tcgagatgat gaattttata 3300

agacaccttc acttagcagt tctggttcct ctgatggagg gacacgacca agcagctctc 3360

agcagggctt tggggatgat gaggcttgca gcatggacac caactaatgc tgactccacg 3420

atcctgccac cctgtagcgc cagtgtaatc ccccaggaga acatctttga cactctgcag 3480

actgctagtg ttctgtctaa aaaccagaca aggaaatacc cttcttttat gagcagaagg 3540

aacc 3544

●

<210> 451

<211> 3409

<212> DNA

<213> Homo sapiens

<400> 451

```
gatgatgcgc cggtccctgg agcgcacaca gcagctggag ctgaaaaaga agtattcgtg    60

gggagcacca ctggccattg acccggagg acatgatggt ttagcagcca gcaccctccc   120

tccggatgca gggaccactg ccgcagctgc cgagtccacc aacgcatgtg acaaactttc   180

aacatcaact atgagtttgc caaagccaac ggagcctccc atgaataaac gcctgtcttc   240

atccaccgtg gcaatatcct attccccaga ccgagctcct cttggccctc ttaacccttc   300

ttacaagtct tcacccactc gaaacattga gaagaagaaa gctacatcta cgtctacatc   360

tggtgcagga gatgttggga aagaagccct ttcaggagga gaggcctctc tggtggagaa   420

ggtgaagcgg gggcaacgaa cagcaacttc tcttcctgtt gtgaacttcg ggtcccctct   480

gagaagatgt gagtttтctg gaggcattcc taagagacca tcttctcctg tgatatccaa   540

gacagctact aaagcttatc cacagtctcc aaagacaacg aaacctccct acccagggtc   600

tcctgtgaag taccgcttac ctgcccttтc tggccaagac atgcccaaga ggaaagcgga   660

gaaagagaag agcaacaagg aaagggaagg taccttggct cagcaggctg ctggcccgca   720

aggagaggaa gccctagaga agcatgtagt ggacaagcat gccagcgaga agcatgctgc   780

tgccgcagga gggaaagccg aaaacagcgc agccttgggg aagcccacag caggcaccac   840

tgatgcagga gaggctgcga agatcttggc tgaaaagaga agacaggccc ggctgcagaa   900

ggaacaggag gagcaagaac gactggagaa ggaagaacaa gataggctgg agagagagga   960

attgaaaaga aaggcagagg aggaaaggct tcgcctagaa gaggaagccc gaaagcagga  1020

agaagaaagg aagcggcagg aagaggaaaa gaaaaaacag gaaggggaag agaaaagaaa  1080

ggcaggcgag gaggccaagc ggaaggctga ggaggagctg ttgttgaaag aaaagcaaga  1140

acaagaaaaa caagagaaag ccatgattga aaagcagaaa gaagcagcag aaacaaaggc  1200

ccgggaggta gctgaacaga tgcgtctcga gagagaacag attatgctgc agattgagca  1260

ggagagactg gagagaaaga agagaataga tgaaatcatg aagagaacaa ggaaaagtga  1320

tgtgtctcca caagtgaaga aagaagaccc caaagtgggg gtccagcctg ctgtgtgtgt  1380
```

```
ggaaaagaag acaaaactgg ttgtccccaa caaaatggaa atcagtggat tgaacacctg 1440

ccaggaagtt aatggtgtgg atcacgctgc cccagaaact tatccccaag acattttctc 1500

taatgggctt aagccagctg ggggactcat tcatctggat gcccttgatg ggaaatcaaa 1560

tagcctggat gattcaactg aagaagttca gtctatggat gtgagtcctg tttcaaaaga 1620

agagcttatc tctatcccgg aattttcacc agtgagtgaa atgattcctg gggtgtctct 1680

ggaccaaaat ggaactggta atgcccgagc acttcaagat ctcttagatt tcactggtcc 1740

cccgacattc cccaagagat ccagtgaaaa tctcagcctg gacgactgta acaaaaacct 1800

tatcgaagga tttaacagtc ctggccaaga aactcctctc aacaccttct gttgacaaat 1860

acagcatccc tttaataaaa ggtgtttgga gaacccgtaa agctgctgat agtcaaatcc 1920

gagctactag ctgcttgaag aagcttctgt cacccttacc gctggatccc aaattattag 1980

ctcggaatgt aactgtattc ctaggtagta tgtcaaacac tggccactct tggtagaaac 2040

cttgaaactt tcaccttgct gggctttagc aaagtttcct tttacagttc tgtttatgag 2100

cttcagctac tgataaagca cttcctgaac ttctctatta tcatagtgac cctctgaata 2160

acctgagtga ctggctcggc aattcgcttt ataaccattc ttattcccaa agttggagca 2220

cataaacatt tagatgtctt ttcctgtaaa atattctaga catttaccca aactctagtt 2280

caacatatac tcaacttgca ctgtatatct ccctgtcttt tttgagacag agaagaaatt 2340

caggaggttc cccatctcca gagtttctct gttggaaagc agtatcaaga agcctttaaa 2400

aaattgttgt taagctttgc cacctgcaga aatgcattgc cccacattat tcttctgggg 2460

ttaaagtagt aagtttggtt gaggaaggaa gtcaaaacag tcagtaatga tttctgttct 2520

cttatgcata ttcgtgtata catgggcaac tgaatctagc aaggactctt tcgtgtcaca 2580

ccttaaaatc ttcatgctgt agtcactcca gaccatggag tggctttcca gctgaatgaa 2640

tcctatgtct cgcgtgcagg tggttggttt tcaatgttct tgctaatttt ttttctattg 2700

gatcttggga gtttttctttg tttgctcctg tgtttgccca gctttaataa aaccaggcgc 2760

aaacaaaaac catagcattc tgaaacaata gggggcccac attggaccca gtatgtcact 2820

ttaatggact tcaagaaaaa atctgaatgg gaaaaatgac actagaatgt atactccaca 2880

cattttatgc catataatgg tgtgttttct taattttgtt tcttgtggcg aaatgtggct 2940

ttcaaattaa aatgaccttt tcttctttga aacttttgt tttgacttgt ataattaagg 3000

gtttggaaag attcataatt ctgagagagg tttgcaacca ggagatacaa agaagtctca 3060

gtagtaatct tgttcatgtg cttttacagc cagctacatt taagaatgta ttagttacag 3120
```

aaattatatg tctgtgtatg tgtctctact caataaagta catgcctcca cataatgcgg 3180

tgctgtccat ctcggcaaat actggccaag tcccttttatg acaggcacac agaaaccata 3240

gcatggtctg gctttcagaa aatgcctctc atctttcctg gaaccttatt ttgctaaatg 3300

tctgtttttct tgtgatttgt tgtacctcac agcaccattg tgaccatggt gatgcctcat 3360

ttgcatgata tgtaccttgt gtttaatgtg aaatacattt tcattgaag 3409

<210> 452

<211> 2864

<212> DNA

<213> Homo sapiens

<400> 452

attttgagcc gctgccgcca ttggagtggg cccccccccct ttccccctttc gcctcctgac 60

aggaaaggtt taagggggac agagccctgg gaggccgggc cgggctcggg ggccacccccg 120

ggggcccggg ccatggatgt gcgccgtctg aaggtgaacg aacttcgcga ggagctgcag 180

cgccgcggcc tggacactcg aggcctcaag gccgagcttg ctgagcggct gcagccaccg 240

ccgcccgggc tgcagccgca cgcggagccc ggcggctact cggggccgga cggacattat 300

gccatggaca atattaccag gcagaaccaa ttctacgata cccaagtcat caaacaagaa 360

aacgagtcag gctacgagag gagaccactg gaaatggagc agcagcaggc ctatcgtcca 420

gaaatgaaga cagagatgaa gcaaggagca cccaccagct tcctcccgcc tgaagcttct 480

caactcaagc cagacaggca gcaattccag agtcgaaaga ggccttatga agaaaaccgg 540

ggacgggggt actttgagca ccgagaggat aggaggggcc gctctcctca gcctcctgct 600

gaagaggatg aagatgactt tgatgatacc cttgttgcta ttgacaccta taactgcgac 660

ctccacttca aggtggcccg agatcggagt agtggctatc cgctcacaat tgagggcttt 720

gcatacctgt ggtcaggagc ccgtgccagc tatggggtca gaaggggccg tgtatgcttc 780

gagatgaagg attttgaatg tggaaatgac gtggaactgt cttttaccaa gaatggaaag 840

tggatgggca ttgctttccg aatccagaag gaagccttgg ggggtcaggc cctctatcct 900

catgtcctgg tgaagaattg cgcagtggag ttcaacttcg gacagagagc agagccctac 960

●

tgttctgtcc tcccgggggtt taccttcatc cagcaccttc cccttagtga gcgtatccgg　1020

ggcaccgttg gaccaaagag caaggcagaa tgtgagattc tgatgatggt gggcctgcct　1080

gctgctggca agaccacatg ggccatcaaa catgcagcct ccaacccttc caagaagtac　1140

aacatcctgg gtaccaatgc catcatggat aagatgcggg tgatgggcct acgccggcag　1200

cggaactatg ctggccgctg ggatgtcctg atccagcagg ccacccagtg cctcaaccgc　1260

ctcatccaga ttgctgcccg caagaaacgc aactatatcc tagatcagac aagtgtttat　1320

gggtcagccc agagacgaaa aatgagacca tttgaaggct tccagcgcaa agctatagta　1380

atttgtccca ctgacgagga cctaaaagac cgaacaataa agcgaaccga cgaggaaggg　1440

aaggatgtcc cagatcatgc ggtcttagaa atgaaagcca acttcacgtt gccagatgtt　1500

●

ggggacttcc tggatgaggt tctgttcatt gagctgcagc gggaggaagc ggacaagcta　1560

gtgaggcagt acaacgagga aggccgcaag gctgggccac cccctgaaaa gcgctttgac　1620

aaccgaggtg gtggtggctt ccggggccgc ggggggtggtg gtggcttcca gcgctatgaa　1680

aaccgaggac ccccctggagg caaccgtggc ggcttccaga accgaggggg aggcagcggt　1740

ggaggaggca actaccgagg aggtttcaac cgcagcggag gtggtggcta tagccagaac　1800

cgctgggggta acaacaaccg ggataacaac aactccaaca acagaggcag ctacaaccgg　1860

tctccccagc aacagccgcc accacagcag cctccgccac cacagccacc accccagcag　1920

ccaccgccac cacccagcta cagccctgct cggaacccccc cagggggccag cacctacaat　1980

aagaacagca acatccctgg ctcaagcgcc aataccagca cccccaccgt cagcagctac　2040

agccctccac agagctttgg ctttttttccc tccactttcc agccgagtta cagccagcca　2100

●

ccctacaacc agggaggtta cagccagggc tacacagccc caccgcctcc acctccacca　2160

ccacctgcct acaactatgg gagctacggc ggttacaacc cggcccccta taccccaccg　2220

ccacccccca ccgcacagac ctaccctcag cccagctata accagtatca gcagtatgcc　2280

cagcagtgga accagtacta tcagaaccag ggccagtggc cgccatacta cgggaactac　2340

gactacggga gctactccgg gaacacacag ggtggcacaa gtacacagta gccagtgtga　2400

cccagaggct cccggaggcc cctgccagct tcctccacca gcgcctgcct cggcccctcc　2460

tctgcccccg ccagatcccg tggtgctggg gatggggtca tcccagggct gcctccctcc　2520

agcccactgc ctcccctctg aggggcttcc ttcccctcca tagggccagg cattttttc　2580

tggattcaaa caggcaacaa tgacctttta ttttctgttt gtccccacct ccccagcctt　2640

ccacctcctg ttcttcctac cttcttcctt tttgactaaa taatccccac ctcccttgat　2700

catacagtga ggctacagtg actgagggga gaatcccctc ctgttcactc tcccaacccт 2760

gctccagccc ctcagcttcc cagaccctca tgcagttggt tgtaaattct cccaggagct 2820

gttttactgt ctacttttca ggattaaaaa aaaaatcaaa actt 2864

<210> 453

<211> 3908

<212> DNA

<213> Homo sapiens

<400> 453

agcagcagca gcaacagacg acgacgacct ctcaggtgca agttccacag atccagggcc 60

aggcccagtc cccagcacag atcaaagctg tgggcaagct gacgccggaa cacctcatca 120

aaatgcagaa gcagaaactg cagatgcccc cgcagccccc accgccacag gcccagtctg 180

cgcccccgca gccaacagcc caagtgcaag tgcagacctc gcagccgccg cagcagcaga 240

gcccccagct cacgacggtc acggccccaa ggcctggtgc cctgctgacg ggcaccaccg 300

tggccaacct ccaggtggcc cggctcctgc aggcgcaagg gcagatgcag acccaggcac 360

cccagccagc ccaggtggcc ttggcgaagc ctccggtggt gtccgtcccg gcagctgtgg 420

tctcctcacc gggagtcacc accctgccca tgaacgtcgc ggggatcagc gtggcgatcg 480

gtcagccaca gaaggcagca ggacagaccg tggtggccca gcccgtgcac atgcagcagc 540

tgctgaagct gaagcagcag gccgtccagc agcagaaggc catccagccc caggctgcac 600

agggcccggc agccgtccag cagaagatca ccgcacagca gatcaccacc cctggcgcgc 660

agcagaaggt tgcctacgcc gcgcagccgg cccttaagac ccagtttctt accacaccca 720

tctcccaggc ccagaaactg gccggggccc agcaagtgca gacccagatc caggttgcaa 780

aacttcctca agttgttcaa cagcaaacac ccgtggccag catccagcaa gttgcctctg 840

cttcccagca ggcttctcca cagactgtgg cgctcacgca ggcgacggcg ccgggcagc 900

aggtgcagat gatccctgca gtgaccgcga ctgcccaggt ggttcagcag aaactcattc 960

agcagcaggt ggtgaccacg gcgtcggccc cgctccagac tccaggcgct cccaacccag 1020

cccaggtgcc cgccagctcc gacagcccaa gccagcagcc caagttacag atgagggtcc 1080

ctgctgtcag gctaaagaca cctactaagc ctccgtgcca gtagtcaggg cagcagggct　1140

gcctctcatc taaagcaaaa ctaccttcct cacagaaaac gctttattag tgaaccttgg　1200

gaccatgtca cgcaagagat tcagcactgg gaaagatata attgaaacaa aatagtgtaa　1260

tcattttatt aaaatgcatc ccacactgca ggacaaatgg tccttatgga gtgccgcgtt　1320

ctctgtacta cgtggctcat ggaaaaagtg acaacatggc ttcctctaaa tcatttcacc　1380

tttcagtccc cacccgcacc cgtcccctag agccatagta ctgtgttctg aaagccattt　1440

agaatttctt tgtgagcatg tagtgctttg cacgccacag aagccgtctg ccgtgtgtga　1500

ggagcataca atggactttc taaagataag gcgtgggctt ccacagtgtc tgccagagtt　1560

tagttcttta taccttactg aaaaatgcct cgtggtcttc gcagagggga aggcctgtct　1620

aaagtcaatc atccgagatg ggttttccat tccaaagaaa ggcaatatgg ttccttcctt　1680

ccctcctaaa atatgactta acttttaaga gaaatgttct gacacccacc taaacacaca　1740

aggcacgttc ctggcctgtg ttcaagggaa atgatcagtc attgcattgt tattccaaag　1800

agcagccaac agtggcctcc cccaggccct accctgcaat gggattcgct ttcatttaat　1860

ggaaacttct gggactgatg cccaactcag tgcactcaag acgcatctcc agttttcggg　1920

ggaagctggt atttgacata gtgtgttaaa cagctcctga gaacctttgg gacactctgc　1980

catggctggc gtgaggccca gaggaccacg cagaggcaat ggtagtacag atgtcacagc　2040

tgagggtacg atgaggcctg ggctcagtga gccaggacga atgtgacaga caccccttgc　2100

tgccacagtc agccctttga cgaaggtggg ctggtgattc tggaagtatt ggctatagcg　2160

gtgggcccag tcaactcttc cttgtggact tacgacagca gattttctct aggataagct　2220

tgtgtggttc tgccagtgaa gcagagaacc acctgtgctg ttgtggaagg cgtgccgttg　2280

aggggggaaaa cgaagcccag tatttgctac tgtttttcct tttttttacta tgacaggaaa　2340

ataaatgcaa ttttagtgga attgattgac agtgtctcct tactttgaag ttttcaccaa　2400

agcaaaaagg tccatatcca atagtatcct ttgtgctgtg gcttgatttt ggcctatttt　2460

acattatttg gtccaggaaa ttaggttata ttaggttttt tgtatactaa aaatcagtta　2520

tggcacaata aagatttttct gtttttaaat tgtatttcat ctgcttcctc cccattctct　2580

cactttaagt gacattgagg aaggtattct gtcccacagg tttctgtgga cagcgataca　2640

gcaggagtca gtgaaatcaa ctggggagct cacttgagct cttgataaga aatgtggaga　2700

aaagtaaaaa ccaagctttg aagaaacaga agaaattaat cttttagtta gttgaacata　2760

ccaaagcaga ggactggaat ctgtttgttc taaccaaccc gttctccctg gcttggcacg　2820

tgccgtgaga gcgcagcttg ccggagggag ggccgctgtg tgcgcctcac atctggctcc 2880

cagtggaaac ttttactcct cctcatccgc agatgtgata gaactgaagt atctaggaat 2940

tctgcctttg tcatttgttt taatttgtgt gccctgttca ttttttttgt ctttcccaaa 3000

tcttggtagt ctccttatag ttgaagataa aatgttgagt gcacttattt tagaatatcc 3060

tagacataac tgtctaagta aaagcgctct attaatctaa aacactacaa gagaatttaa 3120

caccatctct caaatgcttt tttggagagc ttaatgggat tctgaatatt tgcaatgtgg 3180

agtttccgcc ccgatctcac gtcagtgagg gtctcctgtc tctcaagtgt gtttcctttg 3240

gctgttccct aatacaaaac acggacatat ttttactcgt agcactcaat ttagtaactt 3300

ctagatgcta ccgttgacct gagttaaatt catttagtcg tgtacgtaaa aactctcctt 3360

ttagtgtgtt attttcttgg ccttcccttt taaaggttaa agtttctaac ctaagaatta 3420

agtacgcgtt caggaagctg ttgtctaggc cttccccttg tgaatctggg ttcattccaa 3480

tacggcaagt aagagttgga aactttgaga acacagacta taaaggcagc agcccgaaca 3540

ctgtcagact ctaattggcg accctgggaa acagttgccc tgctattctt taaagaaaga 3600

cgtttattct gatgataaaa acagttagcc agactgtttt taaagcacct ggcgggaagc 3660

agaaggttgg atccaagccc ttgttcagat ttggtgcctg ataagacagg ggtttctctt 3720

tttgtgacct ttattattat tattttgtta actgttgtaa ccagttagct gttgtgtttt 3780

aagatagaaa ggaacaagac taaaattgta aatactttgt aaacatcagc atttgtactt 3840

gaatagtagg attttaaagg gcattgatag cataccaaac aaaaggcaaa ataaagtgac 3900

cttttttat 3908

<210> 454

<211> 4819

<212> DNA

<213> Homo sapiens

<400> 454

aaaaaagccc ttctccagca acgtgatcgc gccgcccaag ttccctcgcg cggcccctct 60

cacttccaag tcctggatgg aggataacgc tttccggacc gataatggta acaatctgtt 120

gccatttcag gaccggagta ggccctatga tactttaac ttgcactcgt tggagaactc   180

cttaatggat atgataagga ctgatcatga acctctgaaa ggtaaacact accctcccag   240

tggcccacca atgagtttcg ctgatataat gtggaggaat cattttgcag gacgcatggg   300

gataaatttc catcatccag gaacagataa tattatggca cttaacagtc gatcttctct   360

ctttcccttt gaagatgcct tcctggatga tagccatggt gatcaagcct tgtcatctgg   420

cttaagttct cccactcgct gtcaaaatgg ggaacgagta gaacgctact ctagaaaggt   480

gtttgttgga ggacttcctc ctgatattga tgaagatgag atcactgcca gctttcgcag   540

gtttggacct ctcgtagtag actggcctca caaagctgaa agcaagtctt attttcctcc   600

taaaggctat gcctttctgc tgttccaaga ggaaagctca gtacaagctt tgatagatgc   660

ctgcctagaa gaagatggga aactctacct gtgtgtgtca agccccacca tcaaggacaa   720

gccagtgcaa attcgaccat ggaacctaag tgacagtgac tttgtaatgg atggttctca   780

gcctttggac cccagaaaaa ctatctttgt tggggggagtt ccacgacccc ttcgagctgt   840

tgaactggca atgatcatgg accgtttgta cggtggtgtc tgctatgctg gcattgatac   900

ggacccagag ctgaagtacc ccaaaggtgc tggccgcgtg gcattctcca atcagcagag   960

ttacattgca gccatcagcg ctcgttttgt gcagcttcag cacaatgaca ttgacaaacg   1020

ggttgaagta aagccatatg tgctggatga tcagatgtgt gatgagtgcc agggcacacg   1080

ctgtggtggg aagtttgccc cgttcttctg tgccaacgtc acctgtctgc agtattactg   1140

tgaatactgc tgggcgagca tacattcccg agccgggcgg gagttccaca aaccgctggt   1200

gaaggaggga ggcgaccgcc ctcgtcacgt cccgttccgc tggagctgag ccacgggccg   1260

acccagccac aagtactgga gtagataaca aggagggaaa agagagggca ctgcctcagg   1320

gcttacagtg ttctggaaat ctgtgcattc gttctcgatt tttaaagaag aattgggtct   1380

ttttattatt attattatta tttacagtca tattactgaa ctcagtgtcc agtataatgc   1440

agaattgcag agtgtagaat ggtactgatt tgcactttga ttcacacctt tgtctgcttg   1500

gtaccttaat tttttatacc tgatttgtca ctcgtgacag tatgtagact gccattctca   1560

tcagcggccg tcaggctact gtctgtgatt cttttgtttg ttgttgtggt gttgttctga   1620

ttgttttgaa ctggagcatg cacttatttt cagaaactta gagagttgcc cctaggacaa   1680

gacttaccaa aggtaatact cgtgagtagg tggcagatgt agcaaaaact tcacaacaat   1740

tcagcaatca ttagctcggg tcacttagag taaggataac ccttcatgaa aataagcctt   1800

tagttgctct ctattttgac ttgtaaggat acctcataag ctggatcttt tatttttcct   1860

tcatgtttga ttttgtttt gccgaggatt ttggttagat cttttagtat tatgtaaatt 1920

tatgctgcaa tagcttttgc tgctattaaa atggtattat taataccata atactctatt 1980

caggctagga tatcaattaa acacaaaaac ccaacaacac acttttgtga ttttagggat 2040

agagtcagct gccgaacgga gatcagaata gacttcagaa agcttcggtg gaaggtcact 2100

atttctgact gcatgtttac ttaatcaggt tgctgcatgc aataaatttt atatccaatg 2160

tctagtataa aacgttccca caatgcacaa attaagaatc tatataagct ataaaaatac 2220

tcattttta aaaaagtct ttttcattca aagaattggt aattgaccgg aggaaggcat 2280

gcctcaataa atggaatgct ctgaatggga agagcccata acagaatgac ctatattaca 2340

accgatataa aacctaggtg taggatattc ttcaagcaaa tttgtggatg gtagatgaag 2400

tactttgcgg tgctctgtta tatattgtga aatttatttt acatagtaaa gtgattatgt 2460

ctaactgtga tcaaacttaa ctgtttaaag cctctgtcag acattaatga acttgacagt 2520

tcataactga tatattataa actaacacat gagctcttag ttacaatctc ttagtgcttg 2580

caccattta catagcttca gaccttgtcc agaaaaccaa agagctcatc ttagcttaca 2640

aacactaaga atatatacag gatatagaga taagttgtca gattgacaaa ctaggcacat 2700

ttttaagaaa gttgtgtaat ggtgatgcta aagaaatgtc tgtacaaaat aagatggcct 2760

gggcagagtt ggttgtctga gtgagaaact aactacttaa ttccctggat ttatcctgtt 2820

aagcttgagt agaatgaagg cctgctagca ctagcgtggt ctagaatgaa ggcctgctag 2880

cactagcgtg gacattttc tagcattcac ccttgggctg cagatagtaa tatataaaca 2940

cacacaatga ttgcaagact atgtaaatct tttttaatc ttcttcctat gttttggaat 3000

tctggggaca atctgactgg atatgacact gcagaataga tttaagtcgc tgtgttttct 3060

gtgctgtgat gtccttgtac tgtcttaagt tagtgttgct tgtttttgtt ttgttctccc 3120

atgtttagtt gcaattactg gctctcaagc tatagtttgt tttcaaaaag gaaaaacaaa 3180

atagttttt actggattaa aaatgcttat tttagaatcc tcccttttt gaggctttt 3240

ggtaataatt gctttttcc agcccaggtg tggttttgtt tgtttttttc tatgtttgtg 3300

ggttttttt catctgtaca agaaatttg ttatgcacta ctacttttg tattctagac 3360

agttttcaaa agttggcaga tttttttttt tgtttttaag gaaaaaggca tgctttctga 3420

ctgacatgat cttttgcaat acctcaattt tgaaatatag gaaagaaaat gatattttct 3480

aagtaagttt attcagaaaa atatatatta atttaattct gcaagaaaat gatttaacag 3540

atgggtaact ttattttttt catgcttatt tgtgttttt gaaaatgaag aagttagagc 3600

tttataacta taatattaaa gatcatatct aacctacaga aatctaccta attatgtgaa　3660

agaagcaaaa cttttttgaag aagcacccct cttcatgta ttaaaataac actgagattt　3720

ttttaaaagc tggaagattg tacagcataa agctaaagtg aaggcaaaaa acattgtcct　3780

gaagaatagg ttacaaaaaa taaactccat ttggtgctga aagttgtgaa tagatggtgg　3840

aaactacttt cccttaattt gtatatttct aatcaagtgt tgattgtgcg cgactgacca　3900

ggattgtgaa agagttcttc tgtttgtatt tttttaaaga gaactttttt agtttattaa　3960

attataacat gttccctttt gttttgtaaa taaatgtgcc cccaagttgt taatgttata　4020

ttaaaagaga gggtccttca aaaaaattat tttttaaaac acagaggtgt tctgacctgc　4080

aacttgactg ggaagcccct gggtaacaca ggtcctgctg tggcctttcc ttggtgtgac　4140

acttgaacta gtcgattttt tgaaggctat aacctaacct cgactatttg ttgttatgtg　4200

caatactgtt tgtactgttt gtataaaaaa tagaaaaaaa aaagaaaaga aaaaaggcat　4260

aaatctttat tgcagattta ttttcattgc aaactttaga cattgtgatt cactgaaatc　4320

atttttctac tgtcaaatat gtaccttttc ttcatgctgg tatttttttca atagtaatgt　4380

agcctttgta ctgagacaaa ttttcattgt tatttttaga aagattttttt gctaagaaaa　4440

aaattaaaca tatttacata ttttttcattt tatttcgtat tttctttaag gagtgctttc　4500

tcaatcatta atagagttgt ttctgggagg gactttcata tctggtcaat gtcataatat　4560

tattttgtat ttttattgga ataaattaat tttatgatgc taattctttta aaagtttatt　4620

tttttcattt tcagttattt ttgaagctaa aacctttgta atattgttac taaagtgtct　4680

agttttttga aatgcaaagc tttatgtatt aacttgccga tgtggtttac aatagtgtga　4740

caacgatgaa aatgcttggt tatgtaaagt gattggaaat gtaatggata attgggtaat　4800

aaaatgacag aatgagcag　　　　　　　　　　　　　　　　　　　4819

<210> 455

<211> 5248

<212> DNA

<213> Homo sapiens

<400> 455

```
atgatcccga tattttaaaa gctgagatct ccactacaag attaaggtat ggccaactta    60

aaaattgaac tgtcaaaatt ggacagtgag gcctggcctg gggcactgga tattgagaag   120

gaaaaactga tgctgattaa tgaaaaagaa gaacttttga aagagcttca gttcgtcacc   180

ccacagaaac gtacccaaga tgaattagaa cgcctagaag ctgaaaggca gcggctggaa   240

gaagagttgc tgtctgtgag gggaacacca agcagagctc tggccgagag attgagattg   300

gaagagagaa gaaaagagct gctacagaaa cttgaagaaa ctactaaatt aactacttat   360

ttgcattcac aacttaaaag cctctctgcc agcaccctgt ccatgtcatc tgggagcagc   420

ctgggttccc tggcatcgag tcggggctct ctgaacacct ccagcagagg gtcactcaac   480

tccctcagtt ccaccgaact ctattacagc agtcaaagtg atcagataga tgtggattat   540

cagtataaac tggacttcct tctgcaagag aaaagcggtt acattccttc tggacccatc   600

accaccatcc atgaaaacga ggtggtcaag tccctagcc agcctggcca gagtggactc    660

tgtggagtgg cagctgcagc aacaggccac actcctccac tggctgaggc cccgaagtct   720

gtggcctccc tgtcctcgag gtcctccctt tcctccttgt ctcctccagg ctctcccttg   780

gttttggaag gcacgtttcc catgtcttct tctcatgatg cctctctcca tcagttcact   840

gctgactttg aagactgtga gttgagtagc cattttgcag atatcagcct catcgaaaat   900

cagattttgc tggattctga ttcaggagga gcctcccagt ctctttcaga ggataaagac   960

cttaatgaat gtgctaggga gccattatat gaaggaactg cagatgtgga aaaatcatta  1020

ccaaaaagaa gagtgatcca cttgcttggg gagaaaacca cttgtgtgtc ggctgctgtg  1080

tctgatgagt ctgtggctgg agacagtggg gtctatgaag ctttcgtgaa caacctagt   1140

gaaatggaag atgtcacata cagtgaagag gatgtagcca ttgtagagac cgcccaggtt  1200

cagataggac tcagatacaa tgcaaaaagt tcaagtttca tggtgattat agcacagctc  1260

cgaaaccttc atgccttctt gatacctcat acttcaaaag tatattttag ggttgccgtt  1320

cttccttcct caactgatgt cagctgtctg tttcgcacaa aagttcatcc gcccacagaa  1380

tccatttttat tcaatgatgt gttcagagtc gccatttccc aaacagcctt acaacagaag  1440

acactgaggg tagacctttg ctctgtcagt aaacaccgaa gggaagaatg cctggctgga  1500

actcagatca gcctggcaga tttaccattt tccagtgagg ttttcactct atggtataac  1560

ttgcttcctt ccaagcaaat gccttgcaaa aagaatgaag aaaatgagga ctctgtattt  1620

caaccaaacc agccgttagt agattctata gacttggatg cagtgtcagc cttacttgca  1680

agaacatcag ctgagttgtt agctgtggaa caagaattag cacaagaaga agaagaagaa  1740
```

tcaggacaag aagagccaag gggcccagat ggagactggc taacaatgct aagagaggcc 1800

tctcatgaaa ttgtggctga aaaagaggct gaagttaaat tgccagagga cagtagctgt 1860

acagaagatt taagttcatg cactagtgtg cctgagatga atgaagacgg gaacaggaaa 1920

gaaagcaact gtgccaaaga cctcagaagt cagccaccta ctagaatacc aacactggtt 1980

gacaaagaga caaacactga tgaagccgct aatgacaata tggcagttcg ccccaaagag 2040

cgcagcagcc tgagctctag acagcatccg tttgtgagga gcagtgtgat agtgcgctca 2100

cagacctttt ctccaggaga gcggaaccag tacatctgca ggttaaatcg gagtgacagt 2160

gacagttcaa ccctggctaa aaaatcactg tttgtgagaa actccaccga acgccgcagt 2220

ttgagggtca aaaggacggt ttgccagtca gtccttagaa gaacaacaca ggaatgccca 2280

gtgcggacat ctctagactt agaactggac cttcaggcat ctctgacccg gcagagccgc 2340

ctcaatgatg agctgcaggc gctgagggac ttgcggcaga agctggagga actgaaagct 2400

cagggagaga ctgaccttcc accaggcgtg ctggaggatg agaggttcca gaggcttctg 2460

aagcaagctg agaagcaggc tgaacagtcc aaagaagagc agaagcaagg tctgaatgca 2520

gagaagttga tgaggcaagt ctccaaggac gtgtgtcggc tccgggagca gagccagaag 2580

gtgcctcggc aggtgcagtc cttcagggag aagattgcct acttcaccag agcaaagata 2640

agcatcccat ccctgccagc tgatgatgtg tgattacatg acttaagaaa ttatttttc 2700

atctgttcac tttcttaggg agggtaaaag actgaagatt tgtgtttttg ttttggtgtt 2760

tggtttttt tggtaacgta actgtcaact cttgaagaac ttttatttca catcagattt 2820

tcaacacatt aatttgtaaa gtaccttgag tgtaatttt atatgcttaa aaaagaaaaa 2880

atcatataag aaagatggga taacctggta cacaaatgtt gcccagtatg tgcgcattgc 2940

cagtggactt cattttgtaa aaatggaata gaggcagtac cccaccatgt gtactgttga 3000

gccggctgtt gagaaacaac ttggttcagc cggtggtttt gcttctcctt tgtgttcctg 3060

tgagtaggct gtgccgatgg cagcagcgcc acgtggtatc tgtgcgctgg cgaggagagg 3120

agcgctttcc atttggaggc agtgtgagca cacgctggag tgcagcgttc caaagtccgc 3180

ccgaaatgga tgctgcgtcc acggccatca cctgtgcggg aacacctggt ttccttaaga 3240

caatttcctt tttgtccttt tatatttttc taaagaaaac taagatataa actaccaagt 3300

gctcttaaga ataaaaataa gaataagaat acaaaggagc actactcttg gctacacgaa 3360

agatcttggg attcatgaca ctgagggcag ggagaagaaa gaacaccagc cacgcagaga 3420

tacaaataag ctcatcaaat gagcagctgg tttgtctcac tcagcctgaa tttgcattaa 3480

gtgttcaaaa gtgagtttct ggcttgcact agtgttttgc cctaaatcta aggatggtgc 3540

ctagtggtgg ccctgtgttc tgaggacaga gagagctgga ggggtggagg gaaatgcatc 3600

ggcactcatt tggtgtaacc aagaagaggg ggaaagatgt cttgatagaa tcaaagttgc 3660

caaaaacaaa gaagagttta tcaagcagat ttctaacatt tagtagaaac tacttcatag 3720

ctctcatttt taggggggttc tatctataat ttatggtaaa tagttgggag gcaaagggaa 3780

gaatgtgtgt gggggggatta ttaatttgaa gtataagctg aattgtttat taaaaagcct 3840

attttggatg aacaagttta gagagataaa ctgactaatg tgtcctccag tttagaattt 3900

caccttaccc gacccaggca cttcttaaaa acacagatcc tcagtgcagc tctgccagca 3960

tcaaggcttt taaaatatgt agtatttagg ccatttaaac catacttatt actcaataac 4020

ccaagaaaca attttgggtt agccatctaa tatagcaaat aaaatagatt ttttaaagaa 4080

atccaaaatt gtcttaaagg aatggacccc ttgaagaaaa aaaaaaaaag ttttgttcct 4140

cagttagaat gctcactagc tcactagcaa gaattttat tttcttgaaa gcaattatat 4200

atattttgga aagttcatgt tattggaatt gaagttcaaa ttaagcaact tctgagccta 4260

gaactttaat tacttttcc taaatgtccc aacacttaca tacaaatttc tttgaagaca 4320

taactggaca tggcagacac tgctttgaac aaaaaccagc ctagtgaatt gactgagtac 4380

agtcctttaa ggctgcccag ttcattctat tagatgacta aggaaaacta gaaaaagaat 4440

acagttcacc cttgtcaagg tcaaatgtga aagacagaag tttatttaat gtagaggtaa 4500

atgaaggtga gctgtttca gcatcttagt ttgaccatga aaatgtctat agaattatgt 4560

gtagttgttc cgtacgattt tattttcttc atttatttat ttacagtctt atttatgttc 4620

tgtttaatat atagtttgat tctggccatt ttaaatattt gacacagaag agactatatt 4680

ggaatattta cagctttata agtctttcat cagattagct gttgactttt tgtaatacaa 4740

aaagtttcag acaagtatta aagaataaaa tctgtctcag gctggtagtt agcagttgtg 4800

accaagatgc ttttggttgt tgtatttcac aaaatttcct catttctaac atgagaaatg 4860

aacttatttt aatataatcc tttttctaca ctttaaaagt cagcaatagt gttatgtatt 4920

tataggcagc ttttaataat cttgtcatat ttgtactaac ccaaatgatt cacagtgaca 4980

aaacatttta ataacttgat cacaaaacca tatggacaaa tatgaatttt aatattataa 5040

atactatttt taaaaggtag aatttattcg cacagggtaa aaagaatgta atatttagtt 5100

ctcaagtttg aattatcagt atattattac aattttgtat atcagaatct taagtgttac 5160

aggtacaaaa agaatattgc tagccaaatg aacaaagttt agctaaatct ctgtagcatg 5220

caaatcaaat aaattaaaat tttttgct   5248

<210> 456

<211> 3642

<212> DNA

<213> Homo sapiens

<400> 456

agcggggcgc ctgcgcgcct gcgcgccgct ggccgacgga ggggagcctg ccgatgccga   60

gcgggtgcta cgtcccgcgg tcggagccgc gtcttctccc ggctccgcca ccagccgggg   120

ctcgggtggg ggccctccgg agtgcgcagg gcgacggccc cacctccggc cactgggacg   180

gcggcgcgga gaaggcagac tttaacgcca aaaggaaaaa gaaagtggca gagatacacc   240

aggctctgaa cagtgatccc actgatgtgg ctgcccttag acgcatggct atcagtgaag   300

gagggctcct gactgatgag atcagacgaa aagtgtggcc caagctcctc aatgtcaatg   360

ccaatgaccc acctcctata tcagggaaga acctacggca gatgagcaag gactaccaac   420

aagtgttgct ggacgtccgg cggtcattgc ggcggttccc tcctggcatg ccagagggac   480

agagagaagg ctccaggaa gaactgattg acatcatcct cctcatcttg gagcgcaacc   540

ctcagctgca ctactaccag ggctaccatg acattgtggt cacatttctg ctggtggtag   600

gcgagaggct agcaacatcc ctggtagaaa aattatctac ccaccacctc agggatttta   660

tggatccaac aatggacaac accaagcata tattaaacta tctgatgccc atcattgacc   720

aggtgaatcc agagctccat gacttcatgc agagtgctga ggtagggacc atctttgccc   780

tcagctggct catcacctgg tttgggcatg tcctgtctga cttcaggcac gtcgtgcggt   840

tatatgactt cttcctggcc tgccacccac tgatgccgat ttactttgca gccgtgattg   900

tgttgtatcg cgagcaggaa gtcctggact gtgactgtga catggcctcg gtccaccacc   960

tgttgtccca gatccctcag gacttgccct atgagacact gatcagcaga gcaggagacc 1020

tttttgttca gtttcccccca tccgaacttg ctcgggaggc cgctgcccaa cagcaagctg 1080

agaggacggc agcctctact ttcaaagact ttgagctggc atcagcccag cagaggcctg 1140

atatggtgct gcggcagcgg tttcgggggac ttctgcggcc tgaagatcga acaaaagatg 1200

```
tcctgaccaa gccaaggacc aaccgctttg tgaaattggc agtgatgggg ctgacagtgg  1260
cacttggagc ggctgcactg gctgtggtga aaagtgccct ggaatgggcc cctaagtttc  1320
agctgcagct gtttccctga aagccagaga agaccttcct cttacatcac attaaggtct  1380
cacccttcca tggaaggatt gggaggggtg gaatttcctt tattaaaagg gtttctgtcc  1440
agagtttttt attcctgcca ccctgccctg cccgtttgtg tttgccttta cttcagaggc  1500
caatagcaga gcctacctga cacagagggg acctgggggc ctggcacaga atcttatgcc  1560
tctcccagtg ggcttttgga tgggctctct gccacctccc tggtgttgga ggaagtgggt  1620
ttctgaagct tgcagctgct tttgcaacct gctgggcctg ggctgcccta gttaccggga  1680
acctcctagt caccccatag aaggtgaact ggaacatggg atgccctctt actgctcctg  1740
cttgcctgca tcagatggac acagaaggag ggggctgctg ctgaaggagt caggcttggg  1800
atggagagca agaggccaaa ggactcgtct gggagcatga tcggcccctc ttactagcag  1860
ctccatcagc tgatcagaaa tcagagacag aagggaacta ggttactcgt taaatcctac  1920
ctattttcag cctagaaatc acatgggcgt ttccagtcaa gtgggaagga agctcatttt  1980
tagggcctag acctagacta gttttgcctg cctttttttt cctccctgct ttcttctaca  2040
agccacacaa cattgcttat aaaaggtact tttattacta tttttagaat atatacaccc  2100
catatgtaaa ttaccctcac ttttaaagta ataatagttc cttcacggaa aaaaaaatag  2160
ttctcatcag aaggatgagc ttctaagatc ctgaatttta ctttctactt gattaacatt  2220
ttcgctttag ccagagttgc tatttgcaaa cagctttcca cttccaaagt gccactttct  2280
gaccggtttt tcttcctgtt ttcctcaaat catcctactc ccaaataggc acccactcac  2340
taccttggcg tcgttttttg ggtctgactt gtctcgtcaa ctgctggtct ctcccacctg  2400
gttggaaatg tcgttggaaa cttgcaaaga ctctccagac cttagggaac aagaggcatc  2460
actcagtcct tctgggacag cttccctgta agcaaagcca ggtttgtttt agattcactc  2520
tggcctgaaa aaaaaagtgc cttttgctgc tttaaagaat tggggtatat ggtatgaagc  2580
agccatgtac ttgtattttc ctggtctttc ctgggcactc ttctctcttg gcagatgttt  2640
tcttaaagtg aacacaccag aagcactcta ccccaccata tccagtcctc tttgcatgcc  2700
tgttgtgtgc agggtggagg gtgtcccacg tgccagagca gctgggagcc ctgtccgctg  2760
agttacacta agcactttat ttttatttat tttattatta ttttcttttt tctgagatgg  2820
agtctcactc tgttgcccag gctggagtgc agtggtgtag tctcagctca ctgcaacctc  2880
cgcctcccaa gttcaggcaa ttctcgctgc ctcagcctcc cgagtagctg ggactacagg  2940
```

```
cacctgctac cacgcctggc taattttttgt attttttagta gagatggggt ttcgccacgt    3000

tggccaggct ggtctcgaac tcctgacctc aggtgatctg cccgtctcgt cctcccaaag    3060

tgctgggatt acaggtgtga gccaccacgc ccagccacca ctacgcactt taaaaccaaa    3120

aaaagctcaa agggatggat cattgtccat ggctcaggag ccccactgtg gggtaagtgt    3180

gatgtcgatg gattaattta gacagtggtg tattcatcag ggcaaaggaa attcttccag    3240

aggtgatgat gcggcagata ttcccagtgc tctcccaaag caagctggcc ctcttgtcat    3300

cctctcagtg ggcggcacca gctgcccctc cttccacaag tactcaagcc tgtttgtaaa    3360

tactgaagga attgatgggg ttgaggaaag gaggtgcatg tgaccagggt cccaaggcca    3420

cagctttttca gatcctagga agcaagtggc atttgcttga gttgtggcct cggaaggaga    3480

atgtttatct gttttctaac tttgctgaca ccaggattct ccctgtcatt gagaagaaag    3540

cattatctaa ttaccttcag gtggtttact tattctgtaa agaatatgtg taaatatttt    3600

gtacagagcc ctgtatcaaa taaacagcca tatgtggtta ct                        3642
```

<210> 457

<211> 3543

<212> DNA

<213> Homo sapiens

<400> 457

```
gttgacgacc tagctgggta aggtcttcac gtcctagtaa gaaatcggtg gctgcgggag     60

gtcttcgtgg actgggactc gaacctgacc gacccggcag tgcggggggag aagcccgagg    120

aagattgacc aattttgtaa ttctagaaac atggtccatg gggtgcatct cgttatgttg    180

cccaggctgt ttgccaactc ctgggctcaa gcagtccttc caccttggtc tcccaaagtg    240

ctggtataac aggcatgagc caccacacca ggccagcagc aggattcttg aagaatgtgg    300

atcagtgaca ttcagggatg tggccattga cttctctcag gaggagtggg agtgcctgca    360

gcctgatcag aggaccttgt acagggatgt gatgttggag aactacagcc acctgatatc    420

actgggaagt tccatttcta agccagatgt gattacatta ctagagcaag agaaagagcc    480

ctggattgtt atttggagtc aaaatatgga cctgagaaaa tatctccaga aaatgatatt    540
```

tttgaaataa atttacccaa acatgttata aagcaaataa gtaaaacact tggcctcgag　600

gccttttatt ttagaaatga ctcagaatat agaagtagat ttgagggacg acagggacat　660

caagaaggat atatcaacca gaagatcatc agctatgaag aaatgcctgc ttatactcat　720

gcttctccta ttcataatac acataaacca tatgaatgta aggaatgtgg gaaatacttt　780

agttgtggtt caaatcttat tcagcatcag agtattcata ctggagagaa accctataaa　840

tgcaaagaat gtgggaaagc ctttcaactt cacatacaac ttactcgaca tcagaaattt　900

catactggtg agaaaacttt tgaatgtaag gaatgtggaa aagcctttaa tcttcccacc　960

cagcttaatc gccataagaa cattcacaca gttaagaaac tgtttgaatg taaggaatgt　1020

gggaagtctt ttaatcgtag ctcaaacctt actcagcatc aaagtattca tgctggtgta　1080

aaaccatatc aatgtaagga gtgtgggaaa gcctttaatc gtggttcaaa tcttattcag　1140

catcaaaaaa ttcattccaa tgagaaaccc tttgtatgta gggaatgtga gatggtcttt　1200

cgatatcatt accaactcat tgaacattgc cgaattcata ctggcgagaa acccttttgaa　1260

tgtaaagaat gcagaaaggc ctttactctt ctgacaaagc ttgttcgaca tcagaagatt　1320

catatgggtg agaagccctt tgaatgcagg gaatgcggga aggcctttag tctcctcaat　1380

cagcttaatc gccataagaa tattcacaca ggtgaaaaac catttgaatg taaagaatgt　1440 .

gggaagtcct ttaatcgtag ttcaaacctt attcaacacc agggtattca tgctgatgta　1500

aaaccatatg aatgtaagga gtgtgggaaa ggctttaatc gtggtgcaaa tcttattcag　1560

catcaaaaaa ttcattccaa tgagaaaccc tttgtatgta gggaatgtga gatggccttt　1620

cgatatcatt accaacttat tcaacattgc caaattcata ctggtgggaa accctttgaa　1680

tgtaaagaat gtggaaaggc ctttagtctt ctgacacagc ttgctcgaca taagaacatt　1740

catactggtg agaaaccatt tgaatgtaaa gactgtggga aggccttcaa tcgtggctcg　1800

aaccttgttc aacatcagag tattcacact ggtgagaagc cctatgaatg taaggagtgt　1860

gggaaggctt ttagacttca cctacaactt tctcaacatg agaaaactca tacaggtgag　1920

aaaccctttg aatgtaagga atgtgggaaa ttctttcgtc gtggttcaaa tcttaatcaa　1980

catcgaagta ttcataccgg aaagaaaccc tttgaatgta aggaatgtgg gaaagccttt　2040

cgacttcata tgcaccttat tcgacatcag aaatttcata ctggtgagga gcccttttgaa　2100

tgtaaggaat gtggcaaggc cttcagtctt cacacccagc ttaatcacca taagaacatt　2160

cacacaggtg agaagccatt taaatgtaaa gaatgtggga agtcctttaa tcgtgtctca　2220

aaccttgttc aacatcagag tattcatgct ggtgtaaaac catatgaatg taaggagtgt　2280

gggaaaggct ttagtcgtgt ttcaaacctt attcagcatc agaaaactca ttccagtgcg 2340

aaaccctttg tatgtaagga gtgtaggaag acctttagat atcattacca gcttactgaa 2400

cattaccgaa ttcatactgg tgagaaaccc tttgaatgta agaatgcgg aaaggccttt 2460

ggtcttctga cacagcttgc tcaacatcag atcattcata ctggtgagaa gccatttaaa 2520

tgtaaggagt gtgggaaggc ctttaatcgt ggctcaaacc ttgttcaacc tcagagtatt 2580

catactggtg agaaaccctta tgaatgtaag gagtgtggga aggctttttag acttcaccta 2640

caactttctc tgcatcaaaa acttgtacag gtgagaaacc ctttgaatgt aagaaatgtg 2700

ggacagcctt cagacatcag tagcaactta ctgaacatca gaaaattcat acttgggtga 2760

aaacctttga atgtaaggaa tgtgggaagg cctttcaata tcattaccaa tttcatggac 2820

attatagatt tcatattcgt gagaacccta tgaatgtca aggatgtggg aaatgcttta 2880

ccagtggtag aaaccttaga gtacatcaga gaattcatac tggtgagaaa ccatatcaat 2940

gtgaagaatg tgggaaagcc tttagtcata gttcaaacct gttaaacatg ttaaaattca 3000

tactgatgag aaaccctatg aatgtaagga atgtgaaaag gcctttagca gtaattatga 3060

tcttactgta catctgagaa tccgtactgc tgagaaaccc tgtgagtgta agaatgtgg 3120

aaaactttg gatttagctt agtctttact gcacatcaaa gaattcatac tggtatgaac 3180

cgtatgaatg taaagaatgt ggaaagacct ttacttgtag ctcgagcctt gttcaacatg 3240

ttaaaattca tactggtgag caaccctgtg aatgtaaagg atgtgggaag acctttagac 3300

ttagttcagt cctttctgca catcacagaa ttcatactgg catgaaaccc tatgaatgtg 3360

aagaatgtga gcaaaccctt actgtgaatg atctgcttac gcaacatcag aaaattcatt 3420

atagttagaa gttttatgaa tataaggagt gtagacaagc cttcactgtg tatgaaaaat 3480

ttactcaaca ccagagaatt catattgatg agaaatcctg tgaacataaa agatggtgaa 3540

cct 3543

<210> 458

<211> 4521

<212> DNA

<213> Homo sapiens

<400> 458

```
tatgccctaa aatctgggcc ctgggcaagc acacagcagg agagacaggc ccccggtggg    60

ctatgggcag aacacgaggg ctccggcaat tgggctgaca ccgtccctga gcgtcaggga   120

tggccctgcc agcacctgcc gttctctggg cctcactttc cttgaaaggg tgggaaaggt   180

ggccctgacc ccctttccag ctctgcgcac ctgaagactc tcaggacccc caccccaggg   240

ccgtggcttc atttgcttca ttcagaaaca cattgcaaaa tggaaaatca agcgttaggg   300

taaagaaaga aagtagccag aaagagcccc caggccctcc caaggcgaca tggccaacac   360

agagttccca ggccagcccc tgccctggac gagcggcctc ctggggccac tgggccacct   420

ggagcagctc ccagagctaa cagcacaaga cagcatagcc acattctctg gggaggggtt   480

ggggggacctg gaggcccccc atggggtctt ggggatcaac gacgcggcca ctcagctgcc   540

ctgggggtct gggggttgg tcagtgacat ggccactcgg ctgccctggg ggtctcgggg   600

gtcactgaca ccgacccgtg gatgtcctgg gcccccgagg gggcggcagg cagaggtgcg   660

gcgcgagcat gcgagagcgc caggcggcca ccaggggggca gcaccggcct ccgccccgcc   720

ccccgccccc agccatacct tgcagtgtgc ggtacccacc aggccgccgc aggagggagc   780

tctggccggt cagctcgtgc acgatgcagt tatcagcctc ggtgtcgggt gctgtgggca   840

ccacgtgctg tgggcaagca gcgctgagcc atgcacgggc tggccgggcg cccccacgc   900

tggcgtctcc acctgcctgg ctgctcacct ggtcagactc ccgttcctgg ggccactggt   960

ccagctctgc tagctccagc tcccgagcct cataccccctt tgccgcctcc ttcctctgca  1020

gagaccagcg tcttgagccc aaaccagctc cacaccccac ccagaggcag gaggtcctga  1080

gaccagcccc atggcctggc ctcagcccac ccaccatggg tggcaggtgc tcacctggcc  1140

ggaggggcgg tacgcgcgga gcttgcgcag agaggccgtg gcgtagcaca gcagcaggag  1200

gacgccggggg ctggcataca caggccagtc caggccggtg ttgaggacca gcgcgtgggg  1260

gctggagcag ttggtgggac ccacgaagtc cttgagaccc agcaccctgt ccagagaaga  1320

cccgtcacag cctaccaccc cagaggcagt ggggccacag gggctagacg agccaggtgg  1380

gcgggaccag ggtggcagga aaaaggggct gtgtggcaag ccgttaccta gcccagatgc  1440

cggcaggcgg gagcagagcc tgtgccaagg gcatctggta gcagtagagg cagatgagat  1500

ggccggcgcc gaagcacccc accgcggcgc agagtctgtt gaagccccga gtgctgatgg  1560

gaaagtggca ggcccaccag gtgcagaggg ccaggaagag cagcagtcat cagggaactc  1620

ccaagacccc tcccagtgtg actgccagtg cccccctgcct cggtgcgtac ctgccagtgc  1680
```

aagcagtgtt acggccagga cccgcccagc cgccaccagc agccagtggg ccgtgactcg 1740

gaaacgagcg gccagccgtg acctccgtgt aggggccagc gttgctgctt cctgcagccc 1800

tgccgtcggg ctggcatcca catccctctc atcatcatcc tgccaaggtc acggacaggg 1860

gcaaggtcag gtgtatcgca ctgacgccac ctctccagcc cacacctgcc cagccaggag 1920

cgtgggaggc ggccacatcc acagctgctc ctctgagggc cacaggacag cctccccggg 1980

cacaggcccc agccgtccct gaggtctgcc tgacaccttc ctacttcctc actcaagctc 2040

acagttcctg caggccttcc tggtagcagc tcccaccctg gccgaagacc cagggtctgt 2100

cctgccaagc ccaggcacgt gatgaccttg ccaggtacag acagaccaca gactgtccta 2160

taccacctca tctccccgaa ccacgcaccc agggagcagc ggggccctgt ctataccccg 2220

gggggtctct agagaccaag ggggcctgag ggacatggcc aggctccagg gtctcctgtg 2280

tacccctgcc agccttctgg gtggctctgc ctggaagata ggggtggtac tcctgccctc 2340

cccaagcctc tgggggggaca gaggtggcca gctgcctaga agaagtgaca ggccggcctg 2400

gggctgggga gagagacctg ccgggcctgt tttccctgga cctgactaaa gatttcccag 2460

aacacagcca tttcccaaac accagggaaa gccaggtgtg gtggaaagaa cacggctgtc 2520

gtcagatgcc ctggctctgg cctggctgcc accggcccag tgtccccatc tgtgactcgg 2580

gggctctcct ggtggctgag gcgccaggtg cccgggctga accgcaggc tgtggggctg 2640

gacgataggc cccaccccag ctctgacagt ctccgtgctc tgcaggccga ggcaagtcac 2700

agcctctcgg agcctattcc ccttctgtca aatgggatgg gggcttgacg ggacagatga 2760

accagaccag tcctgtcctc acaggcctcc agggctgcag gggctgctgg gagactccga 2820

ggccagggta acagggagat cagggcagga gaggcccagg ccctgagccc accccctctca 2880

gagaccacac agcagctggg ggcgaggctg gatcagaacg cagggcgcca tcgctcaccc 2940

cacccacagc ctggccctgg ccctggccct gggaaatctt ctgagcagag ccgtgaaaaa 3000

tgagcatttc tgggagtgga aagaacagag gcagctgctg tgagagaaca ggtgtgaggc 3060

caccgagggg caggcccggc cctgacttgg ggtatgaggc caccgagggg caggcccggc 3120

cctgacttgg ggtgtgaggc caccgagggg caggcccggc cctgacttgg ccccacgtg 3180

ccgcagccat gctgcagacg cccctcaccc tcctctagcg gccagcaccc ctcgggctgg 3240

ctggcacact ccgtcgcatg cctgcaaaca cgtgtgtgtg ttgcccatat gtgggagtga 3300

gggtcgcccg ggggccctgc caggccgggt catggggctt ctagatcttt cggaacggta 3360

tcctgcaggt gcctggtgcc cccagctcac tctgaagtct gtccacgctg gccgcccagg 3420

gcgcagctgc acactcaggc tcccatcaca ccaagatgaa gatgaccaga gtccagccac   3480

ccagccccTt cccagcagcc aaactctagg aagctcatgc cccatgcccc catcagcatg   3540

gaggggctga cgagggaggg gcgggtctct tggaggacag gcagcagcac agtcctcatg   3600

agcgctggac cccctcaaat gcccggaaaa gccacttgac ctccaggtcc ccgttcccac   3660

ttctgaaatg cgggcaccag ccttgcccca tggggtggcg acaggacagg caggagggca   3720

ggccgcctct gcaggctgag caggtgtact cgacctaccg tgtggcttgg ggaacccctt   3780

tccctctcgg gactcctcta gaagttgagg cccatgtgcg tggcgagcat cagctatctg   3840

acgagtgggc actgggaggg tgaggtggga ggaggctggg tgcccggggc agggagttcg   3900

tgggccagga cacccaggtg gccataaatc ctggctgagc ctggggatgg caagtgtggg   3960

cccaggcagg gacgagaggg tctgagcagt caacgttggg tgtcgcaggc cccagctcat   4020

gccctgtccg tgtgaggggg ccatagctca gagattcccg gggccggacc tccaagtctt   4080

gtagcagcta aagttcactc tgcctcccac tccgaggaca gaggccctgc ttcaggcccg   4140

tcgctcctgg ggtccaggcc cctgctgggg ctctgggccg acagcctgtt tgcctgtaag   4200

tgcatggggc ctgctggggc cgccccttct cagcccttct gcagtggctc tccagccaga   4260

cccactgccc agcactgcag gtttccacca ccgcgtggcc ccgaataatt cccctgtgaa   4320

gagttcctaa gggcacagat gccatgtcgg ggcgtggagg tttctgacta gaggcagagc   4380

ccgagtagaa acaggtctga acggatggaa ctgcaggctg ggccccgggg tgggatttgg   4440

aacttcctcc tctctttaac accaacttac aaccaaaacg tctacatctg ttttaaaaag   4500

attaaaataa ccctcaaaat g   4521

<210> 459

<211> 3772

<212> DNA

<213> Homo sapiens

<400> 459

gagcaagggg gccactcagc agtggtcagg tcacacggct agaggggcac agtggggcct   60

gggcctctgg tccctactcc tctggtccct ctgtctcctg gccctgggcc agtcacctta   120

gatgatttga tcgctgcggt tgtagtcctg ggatttaaat ctcctgccct gggtggccct 180

atgcagcatg aggccgccag ttgctggttg agaagacaac tgactccccg gcggctgagt 240

tctcgctggt ggaggacgtg gcgctgcact ttgcctgctt gatgggccgc ctgaacgagc 300

agcgcctctt ccagcctgac ctctgcgacg tggacttggt gctggtgccc cagcgcagcg 360

tctttccggc acacaagggt gtgctagccg cctacagcca gttcttccac tcactcttca 420

cccagaacaa gcagctgcag cgtgtggagc tgtccctgga ggcactggca cctggtggcc 480

tgcagcagat cctcaacttc atctatacgt ccaagctgct ggtcaacgcg ccaacgtcc 540

acgaggtgct cagcgccgcc tcattgctgc agatggctga catcgctgcg tcctgccaag 600

agctgctgga cgcccgctct ctaggcccac caggtccggg cactgtggcc ctggcccagc 660

cggctgccag ctgcactcca gctgcgccgc cctactactg tgacatcaag caggaggccg 720

acaccccagg cctgcccaag atctatgccc gcgagggccg tgacccttac tcggtgcgtg 780

ttgaggacgg ggcagggact gctggtggca cagtgcctgc caccattggg ccagcccagc 840

ccttctttaa ggaggagaag gagggtggtg tcgaggaggc cggtgggcct ccagccagct 900

tgtgcaagct ggagggtgga gaagagttgg aggaagagct tggggggttct ggcacctaca 960

gccgcaggga gcaatcccag atcatcgtgg aggtgaacct caacaaccag acactgcacg 1020

tgtccacggg gccagagggg aagccaggtg ccgggccaag cccggccacc gtggttctgg 1080

gccgggagga cgggccgcag agacactcgg acgaggagga ggagggcgac gaggaggagg 1140

aggaggaaga agaggaagag gaaggtggtg gcagtggacg ggaggaggag gaggaagagg 1200

gtggcagtca gggagaagag gaagaagagg aggaggacgg gcacagtgag caggaagagg 1260

aagaggagga gaagcagcac catccatgcc agaagtgccc acgagttttc aacaaccgct 1320

ggtacctgga gaaacacatg aatgtgaccc acagccgcat gcagatctgc gaccagtgcg 1380

gcaagcgctt cctgctggag agcgagctgc tgctgcacag gcagacagac tgcgagcgca 1440

acatccagtg tgtgacatgt ggcaaagctt tcaagaagct ttggtccctc catgagcata 1500

acaagattgt gcacggctac gcagagaaga agttctcatg cgagatctgt gagaagaagt 1560

tctacaccat ggcccacgtg cgtaagcaca tggttgccca caccaaggac atgcccttca 1620

cctgcgagac ctgcggaaag tccttcaagc gcagcatgtc cctcaaggtg cactcactgc 1680

agcactcagg ggagaagccg ttcagatgtg agaactgcaa tgagcgcttc cagtacaagt 1740

accagctgcg gtcacacatg agcatccaca ttggccacaa gcagttcatg tgccaatggt 1800

gcggcaagga cttcaacatg aagcagtact tcgatgagca catgaagacc cacacaggag 1860

agaagccgta catctgcgag atctgtggca agagcttcac cagccggccc aacatgaagc 1920

ggcaccggcg cacgcacacg ggcgagaagc cgtacccgtg cgacgtgtgt ggccagcgct 1980

tccgcttctc caacatgctc aaggcccaca aggagaagtg cttccgcgtc agccacaccc 2040

tggccggcga cggcgtcccc gctgccccag gcctgccccc aacccagccc caggcgcacg 2100

cactgcccct gctcccgggg ctgccccaga ccctgccgcc cccgccccac ctgccgcccc 2160

cgcctccgct cttccccacc actgccagcc ccggcgggag gatgaacgcc aacaactagc 2220

tgccgagctg cacccgtgca cccgctgggg cctggagtca gggcccactc caggagggac 2280

ccactgcctt cccggggagc acagtagtgc gggcctgggc cctgctccac ctccagaagt 2340

ggctggatgt accctgcctg aggccccgac gaggaggggt atgcaggctg gcaggcccca 2400

gagctggtgg agggcatctc actcccaagt gccccccctt tctgtgactc cttgaagcct 2460

ttactttttt ttttttttgg aagtgaagga aaagaaact atttacagca ctccctcca 2520

ggtgaggggg gtgctggggg tctgcagcag aaagaaaggg gcctgggcag caggtgtggc 2580

cagtccctct gccaaggcct gtgccagagg ggttggccag ttggagcctg ggtcagcctc 2640

agcagcctat ccccatgtcc tctatgcccc taatttgctt cctcatcttg gagggtttgg 2700

ggagaagttg gcgtgccacc cccacaaccc ctgaggaggt gtagacccag tctgagagcc 2760

gcaagcactg aggcagggcc tgagactgga cctgggtgag cgtgggggggt ggagggtggc 2820

gaggtgcgga gactgcagac cagtgcttca ctgtgtggag tggggcaggc aggggctgga 2880

ccccagggac ttgccttccc cacccactct gctgccagca ggcccaggga tccctgacct 2940

gcaccaggtg gcaccaaggg tcctgagtcc tggagatgtc cccagaagct gctgtgcctc 3000

acagcgctgt gagccagacc ctccttgggc agacaggctg actggcagca ccagctttgg 3060

gggcagagtc ctaggatgag gcttgggcag tgctggtagg gtttcaaggt gctattagtg 3120

gggcaggggc agggcggctg ctcacagagc accccagttc ctcaccagct actctggcca 3180

tatatcccac accagaagga acaagtgtgg ctgtgtccat ctctgctccc ccaaaggccc 3240

gctctaggcc ttatcctccc tctaggtcct gccacaacct gtccctggct ggctccagcg 3300

tcctcgtccc tcctgggcct gtgcaccggt gggtggggcg cccatagcac tgccggtaaa 3360

ggagcctgca tgttcaggcc cctcggggga ttggggggac tggggaggcg cagcctagac 3420

ccaattgctt gcccccatga ggctagcact aataggaaac ccttttttgt tgtcatttaa 3480

tgtctttatt cctgccttta atatgggggag gaaggttcca taagctacat gtttcctagt 3540

taagctcttt cctattgtgt ttatacagtt ttgtttgtta tactctttgc accttaaacc 3600

cccaccactc cccgacacta ttgccttccc agcatggctg gagtgggaag aggcttgggc   3660

cccggggggaa tggttagggg gactgaaccc ctctgacctt atgaggccca tggcactggg   3720

gcagggagct ggggacattt taatcatcaa taaacgaagc actttattct gt   3772

<210> 460

<211> 3513

<212> DNA

<213> Homo sapiens

<400> 460

tttccatttt atttaccagt tttcagagaa gtactactac aaaggtgacc aataaaagga   60

ttttggttt tgtgtcatta tgaactcatg aattctaaac atatttgaat gagtttcaat   120

ccattgcact tatttgtttg cttttttttga tgcttaaatt gaactatccc tggctagtag   180

gagcttattg agatgggcta ctctgtcctt ttgacacgcc ctcatcattc tgtgagcctt   240

tctcacatct tccatgacaa tatgtgctag gttcatcctg tactctccct gccccaagcc   300

tggaaacagc catttctttc ttgctttttct tttctttatt ttctttttct ttttctttct   360

tttctttcct ttcctttctt tccttacctt tcctttcttt ctttcctttc ctttgtctct   420

ctctttcttt cttttctttt actttatttt tctttccttt ctttcctctc tctctctctt   480

tctttctttt ttcttttttct ttctttttttt ttttttttttt tttgagtcag agtctttctc   540

tgtcgcccag gctggagtgc agtggcacaa tctcggttca ctgcaacctc tgccttctgg   600

gttcaagcaa ttctcctgtc tcagcctctt gagtagctgg gattacaggc acatgccacc   660

acacccggct gattttttgta ttttttgcaga gatggggttt caccatgttg gccaggctgg   720

tcttgaactc ctgacctgcc tggtgatcca cctgccttgg cctcccaaag tgctgggatt   780

acaggcgtga gccactgagc ctggccagaa acagctattt ctttaaggag cactgattcc   840

tttcagtgga gagtggcatt caaaggccaa gattggggg ctcggcatgc ttgctgctac   900

tagattggtc attgtttcta ggcccttttca aaagatggag ctaggaaata attgttttttt   960

aaagagaaga tgatacatca tgggttcata tggacatcct ggctatgttt tgggattttt   1020

tttgcatttt atttttttttta aaatttttttt aattttttaat ttttgagggg acatagtaag   1080

tgtatatatt tatggagatg ttttgatata ggcatgcatt gtgtaataat cacatcatgg 1140

agaatgaggt atgcatctcc tcaagcattt atcctgtgtg ttacaaacaa tccacttaca 1200

ctctttattt tttttttttt gagacaaagt ctctgtcgcc caggctgcag tgcagtggca 1260

cagtctcggc tcactgcaat ctctgccctc tgggttcaag tgattctcct gcctcagcct 1320

cttgagatta caggcgcaca acaccacgcc cagctaattt ttgtattttt ggtagagacg 1380

gggtttcacc atgttggcca ggctggtctc gaactcctag tttcatgtga tccgcccgcc 1440

ttggcttcct aaagtgcttg gattacaggt gagagccact gtgcctggct acttacactt 1500

ttagttattt taactggctc tgttttgaag gtaagccagc agtatttagt gatgatcatt 1560

caccaaatat tcacacccac cgaattcctc agctttataa tctgcaagaa gccctgtttt 1620

actgcatcca attgtgttat tttaccatag atgacagtct ttggagtcta gacagtgaca 1680

gagggcgctt taaggcattt ttatatagaa acccctgtgg ggctggctgt gggctgtcac 1740

acttcttact gtctctgctt gttccatccc ctcctctgct tcattccctt gcttttctc 1800

tgccccccttg ccccggccat ggctccaggt ttctgacgtt ccgatgactg gcaacccccgc 1860

agaagaaggt gatgtcccca gaagcagtcc acctgtggct tttacagagg tcctccaggc 1920

accggccatc aggattcccc cctcctcccc tctctgtggc ctgggtggct cccccagaga 1980

ccaggcctca gggcccgatg cgagcgaggg ggccaccggg cctttcctgg agcccagtca 2040

gcagcaggca gaggccacat ggggagtatc gagtgagaat ggaggggggc tggaggctgt 2100

gagtgggtca gaggagctgc tcggtgagga caccatcgac caggagctgg agcagctcta 2160

cctgtctcac ctgagccgcc tacgggctgc tgtggctgcg ggtggggcag ggggtggtgg 2220

ggagggctcc acagatggag ggatgtcccc cagccatccc ctgggcatac tgacggaccg 2280

cgacctgatc ttgaagtggc ctggccctga gcgggccctg aacagcgccc tggctgagga 2340

gatcacgctg cactatgccc ggctggggcg tggcgtggag ctcatcaagg acaccgaaga 2400

ccctgatgat gaaggggagg gtgaagaggg gctctctgtc acaccctcca gcccagaagg 2460

ggacagcccc aaggaatcgc ctccagaaat cctctccggg gcccgttctg tggtagccac 2520

gatgggagat gtgtggctcc catgggcaga gggctcagga tgtgacggcc ctgtggttct 2580

gggtacagag ggtcagttca ttggggatcc tgagaaaggg atgggcaagg acaccagctc 2640

tttgcacatg aatagggtga tagctggggt gactgagtcc ctggggggagg ccgggacaga 2700

agcccagata gaggtcacca gtgagtgggc aggcagcttg gatcccatat ctggcaagga 2760

gccagcctct cccgtccttc tgcagggggca aaatcccacc ctcctcagtc ccttgggggc 2820

cgaagtctgt ctctctagtg tagccaggcc tcatgtgagc tcccaggatg aaaaggatgc   2880

aggcccaagc cttgaacccc caaagaagtc tcccacccta gcagtccctg cagaatgtgt   2940

gtgtgcactg cctcctcagc tccgggggcc cttgacccag actctggggg tcctggccgg   3000

gctagtggtg gtccctgtgg ctctgaacag cggtgtgtcc ctcctggtgc ttgcgctgtg   3060

cctctctctg gcttggttct cataggctct gcttgtggga tcagcagagg cttaagatgg   3120

gatacatggc ctgtgcagtg aggggacctg ggtcctttgc ttctgagaat gctcaactga   3180

aagagaggcc ttctcatccc caagctctcc agtcaacaca gggctccctg tggtgacacc   3240

agtggagatg agggaacggg tagatggtgt gagtgagggg aactttttaga gtggaactgg   3300

gcatgtcctc cgcctacccc ccgagcctgt atttattttt gtataattct ctggatgagg   3360

gagagtggtc gtgagctggt cttggggcac aattacccag agatatattt attaacagcc   3420

aacctgtgca acctgctgga gctttatttt taatttaatt tatatagagt acctattatt   3480

atatgccaca atagagctct atgagaaaca gtg   3513

<210> 461

<211> 3549

<212> DNA

<213> Homo sapiens

<400> 461

aaatatttca atgtaatgca cgtgtcaaag tttttagtaa atttgcaaat tcaaacaaag   60

ataagacaag acatactgga gagaaacact ttaaatgtaa cgaatgtggc aagtcatttc   120

agaagttctc agacctaact caacataaag gaattcatgc tggagagaaa ccctacactt   180

gtgaagaacg tggcaaagac tttggatggt acacagacct gaatcaacac aagaaaattc   240

atactggaga gaaaccttac aaatgtgaag aatgtggcaa agcctttaat aggtcaacaa   300

accttactgc acataagaga attcacaaca gagagaaagc ttacacaggt gaagatcgtg   360

acagagcctt tggatggtcc acaaacctga atgaatataa gaaaattcat actggagata   420

aaccctacaa atgtaaagaa tgtgggaaag cctttatgca ttcctcacac ctgaataaac   480

atgagaaaat tcatactgga gagaaaccct acaaatgtaa ggaatgtggc aaagtcattt   540

cctcatcctc aagctttgct aaacataaga ggattcatac tggcgagaaa cccttttaaat　600

gtttagaatg tagtaaagcc tttaatattt ccacaaccct tactaaacat aggagaattc　660

atactggaga gaaaccctac acatgtgaag tatgtggcaa agcctttaga cagtccgcaa　720

acctttatgt acataggaga attcatactg gagagaaacc ctacacatgt ggagaatgtg　780

gcaaaacctt tagacagtcc gcaaaccttt acgtacatag gagaattcat actggagaga　840

aaccttacaa atgcgaagac tgtggcaaag cctttggacg gtacacagcc ctgaatcaac　900

acaagaaaat tcatactgga gagaaacctt acaaatgtga agagtgtggc aaagccttta　960

atagttcaac aaaccttact gcacataaga gaattcacac cagagagaaa ccctacacat　1020

gtgaagatcg tggcagagcc tttggattgt ccacaaacct gaatgaatat aagaaaattc　1080

atactggaga taaaccctac aaatgtaaag aatgtgggaa agcctttata cattccttgc　1140

acctgaataa acatgagaaa attcatactg gaaagaaacc ctacaaatgt aagcaatgtg　1200

gcaaagtcat tacctcatcc tcaagctttg ctaaacataa gaggattcat actggcgaga　1260

aacccttttga atgtttagaa tgtggtaaag cgtttactag ttccacaacc cttactaaac　1320

ataggggaat tcatactgga gagaaaccct acacatgtga agtatgtggc aaagccttta　1380

gacagtccgc aatcctttat gtacatagga gaattcatac tggagagaaa ccctacacat　1440

gtgaagaatg tggcaaaacc tttagacagt ccgcaaacct ttatgtacat aggagaattc　1500

atactggaga gaaaccttac aaatgtgaag agtgtggcaa agcctttgga cggtacacag　1560

acctgaatca acacaagaaa attcatactg gagagaaact ttacaaatgt gaagagtgtg　1620

gcaaagactt tgtatggtac acggacctga atcaacagaa gaaaatttac actggggaga　1680

aaccttacaa atgtgaagag tgtggcaaag cctttgcccc atcaacagac ctgaatcaac　1740

acacgaaaat tcttactgga gagcaaagtt acaaatgtga agagtgtggc aaagcctttg　1800

gatggtccat agccctgaat caacacaaga aaattcatac tggagaaaaa ccttacaaat　1860

gtgaagagtg tggcaaagcc tttagtaggt caagaaacct tactacacat aggagagttc　1920

acactaggga gaaaccctac aaatgtgaag atcgtggcag atcctttgga tggtccacaa　1980

acctgaacga atataagaaa attcatactg gagataaact ctacaaatgt aaagaatgtg　2040

ggaaagtgtt taaacagtcc tcacacctga atagacatga gaaaattcat actggaaaga　2100

aaccctacaa atgtaaggaa tgtggcgaag tcattacgtc atcctcaagc cttgctaaac　2160

ataagaggat tcatacaggt gagaaaccct ttaaatgttt agaatgtggt aaagcgttta　2220

ctagttccac aacccttact aaacatagga gaattcatac tggagagaaa ccctacacat　2280

gtgaagaatg tggcaaagcc tttagacagt cagcaatcct ttatgtacat aggagaattc 2340

atactggaga gaaaccctac acatgtggag aatgtggcaa aacctttaga cagtctgcaa 2400

atctttatgc gcataagaaa attcatactg gagagaaacc ctacacgtgt ggagactgtg 2460

gcaaaacctt tagacagtct gcaaatcttt atgcacataa gaaaattcat actggagata 2520

aaaccataca agtgtaaaga atgtggcaaa gcctttaagt catactacag cattcttaaa 2580

cataagagaa ctcataccag gggaatgtct tacgaaggtg acgaatgtcg cggtctttaa 2640

atgctcctca atcctttcta atcataagat aattcataat gaagagaaac tctaaaatgt 2700

gaaaaatgtg agaaggcttt taatcacacc tcaatctgtt gtagacataa gagtaattat 2760

attgatgaga agccaaatta aaattaaaaa tgtggcaaag acttccaatt ctagtcagtt 2820

cttaatgtaa ttcctactga ggaaaacacc tggaaataca aaaaatgtgg caaaacttgt 2880

aaccaatgct tagcattttt gcacatgata gtatttatat gtgagactac ttgtacaaac 2940

ataaaaatat acaaaagcta ttgtctactt gaaatttata gttaataaaa gcattataaa 3000

tgtaatttct gttgaaagac cttttagaaa atataggcca ttaaagtgaa gaatagtctt 3060

aagacagaga atacaaagat aaagagggct ctagtacctg tacttgtatc ccagaactta 3120

ctatatgcat tttgtactag aggaaaactc tgaagcagtt gcttaaactt tgttcaacat 3180

cagagaattt atattggaga gaaatcctac aaatgtaata aatgtggaaa aacctctgtt 3240

cagaaactgc aggttaagaa accagaggcc aggcgcggtg gctcacgcct gtaatcccaa 3300

cactttggga ggccaaggag ggtggatcac ctgaggtcgg gagttcaagg acagcctgac 3360

caatatggag aaacctcgtc tgtactaaaa atacaaaaat tagcaggaca tggtggtgca 3420

tggctgtaat cccagctact caggaggctg agacaggaga atggcttgaa cccaggaggt 3480

ggaggttgcg gtgagctgag atcgtgccat tgcactccag cctgggtaac aagagtgaaa 3540

ctctgtctc 3549

<210> 462

<211> 4923

<212> DNA

<213> Homo sapiens

<400> 462

cttattggtt taaatcagat tgcagaaaaa taaaagctca aatattatct gttatgtcaa   60

agttactatt tgagctgtag atgctgtttt caaaacagat catcctcctt aaagcaccca   120

tctctctcca ctgacatgtg cccctgtgtc cagccgcacc ttccagcaga gttccctgca   180

aagacgcttc cctgcagcct ctgtgggtca ggaattagaa tgggtgcagc taggaaggcc   240

tgtgtctgcc tcgtgatgtt tggggcctca cctggaagac tcagaagcca ggactggcaa   300

catcccgaat cccagtcact cgtgtgtttg atggttgatg ctgcctgttg ggtgggacct   360

aagctggggc tgtcagccag aacacctaca catgacctct gcaagtggcc tgggcttcct   420

tccaacatgg tggctgggtt ccaagggcag gcatcacatg agagaggtac atggctgggc   480

agaagtcttg tttcctctgt gaccttgcct cagaggacac agagtgtcaa ttttactcca   540

tctgtagtca acacagtcag agtcccactt agggtctagg gtagcagaaa tagactctgc   600

ctctggatag agagtggcaa ggttctagaa gagcatgtgg actaaaatat gaccatggcc   660

atttttggaa aatgtaattt gcaacagtaa ataagtgaat gtgtattatg tcagattgtg   720

atcaacacaa tggaacaaga tagagtaaga ggaattggga ccaccagggg tggggcaagg   780

ttcttttctg caaaggcagc caagcagggc tcaccgagga gaccacatag cacagcccag   840

caaaggtgag gctgtcgcca ggtggccctc tgtggtcggc atcttcctgg ccagggaatt   900

gtgtttgcac tgttgtggtg gccaccttaa actgagtact tgtttgtagt taacatcacg   960

tgctatatgc ttatgttcta ctgtattgtg taaaacaagc tgaattttac ctagattttt   1020

gtgttgtact tattctctgg taatatgact ggagaagtat tttatgtctc aagaattatt   1080

atgcatttct tatttctctg tcctttagtt ttgaagggtc agtataaaaa tactttattc   1140

agtatattct agctcattct ccacatacaa ttatattcca atatttgtag ggtttattct   1200

ctccaagcag catgatcaat cagaaaattg gacagtttta aaaagtggtc cagagaacca   1260

gcaaatatga aggcaggcta ataaaaatgc atatcactct aacagtttca aggcagtttc   1320

ctcgggagac tgaggtggga aggtcgcttg agcccaggag ttcaagtcct gcctgggcat   1380

cccagtgaga ccccacctct taaaaaagga aagaaaatgg tttttaaat catttcattt   1440

cgtataagat tattttgcga ggttggtgca tgacattgga gttgcccagc aattggaaaa   1500

agacatgagc gtttaatact gggcgttctt tctaaggctc ttaaagtgaa ggcaatcaca   1560

taaggctatc ttgcttcatg ggtaattaag gcatttcctt ctgcagttcc caaatctaat   1620

gaagaagaag gaatttctct tttgctgaaa tatttcttgt aaggttttca tttcttctca   1680

ttgctccgac tttggaaaaa tgttcttttt acctctgatt ttctcttgta atgtcttctt 1740

gaattgtgag tcggggaaaa aagtaaaaga ttcgctacag attcagactt gcaaaaaaac 1800

gcttagaatc ttgctgtccg taaaactgaa acatccagcc tcacaaatgt ccacatttct 1860

ctctcatctg tgaaggcccg ttgagactgc tcagttggtg tctcctctgt ccacaggaca 1920

tggccgtagc cgtgtgtgga aagggttgt gatggtggcc atcacgagac ccagataaca 1980

ggagtggtta gaagcgcagc ggaggagcct gtcttcctgg gtccgagttg cgtggttagg 2040

agcgcagcgg aggagccggt cttcctgggt ccatgttgcg tggttaggag cgcagcggag 2100

gagccggtct tcctgggttt gagttgcagc tccacctctt cctggcgggt ggcctgggcg 2160

agtgcctcac gctcccgtca gtgctctcag ctgtaaaatg ggaacgatca ggttgtctac 2220

ctccaagact gttgtcagga ttcactcaat gaactcctgt gctttgagtg tctggcgttc 2280

agtggcaggg gaccctccat gtggggacag agactgccac ccattccttt ctgaggattc 2340

agttcttata gactacagta ttactcgtgg gagccaaatt atgtgcagtg tattttcaga 2400

ttttattgac tcacctaaga aaggctcggg gacactgttg tgttctgatg taagagatca 2460

cttgttatat tatgcttttt aaatgttgaa ggcaatactc atcagagtat gcattaagta 2520

gcattgaacc acatttttaa ggtgactctt caactcacca agaatatcgt ggccgctgag 2580

gtcctgcaca cctggggatg cgtcgtgggc gccgaggaga gcgtagcctc ctgttaacgt 2640

agcctcctgc tgctctttgg ggtagaccag ccgtttccac gcacaggctg cacattgttt 2700

catggccttt gcagttgagc ttgtgttggc ctctttccgt cgtgaaccat ggacgtctct 2760

ccttgacctc ctccctacct gggagaacct ggctggccac atagtggaac tggaaatgcc 2820

tccatgctga cgtgtctgcc tttcatgaaa gatagtagca aaagttattg ttatacgtta 2880

caaaaaacca gtttaagaca tggacttttt tcatatgtac atctgaaaat gactttagca 2940

gagattctag ctaatacatg gagttgtgct tcctaagtat tgatagcggc gtatatatag 3000

gattcccaca atttgcagtt gtacagttca aacaccaaac tgtttgtggg gaggagggtg 3060

atttgcagtg atcttttcct caactcaggc cagtctatac aatactattg atatttactg 3120

ccttggagca gccttggcag ccttgtattc tgagctgctg tcagtggttt aaacatttca 3180

cttgggttag ccttgtccct tcgactaggc tggaagccca agaaggcagg agactcgtct 3240

cagatatttc ctggtgtccc tgaaagtcca gcacagtgtg tgcacgtggt atgtccctga 3300

tggaaactgc ttctcaaagt ggaagacagg gagcacctct gcaggcctat agggaggtag 3360

taattggatt tgcgatgtat ttcttttctg caagtatggt tttgtgtgat agaaaccaat 3420

```
gcttcccaaa gttcacattg tggaaactga agccagcaag atactgtgaa ggaaaatgct 3480

tggagaatgt tgcagcctgt gtccctgttg gagtttttgc tgcccaatac caaattaagg 3540

gctctgagga acgcttcctt tgaaaatacc ctagtttaac ttaaactctt tcttaccaaa 3600

ccagctatgc cacgcccttc tgctttggct gtgtagatgc tgttccagtc ctggggagca 3660

caggtgtgtc ctcacgtgcg cttggagaaa gtggagtttt aattacttac ccagcaacat 3720

tcaggacgtc ctgagacctc gtcacttctg atttgggaaa agtctgtgag caaatgggat 3780

tttactaata tgaaaaccca gaacattcca gatgtcctag gaacacaggt cctaggtgtt 3840

tttttttttag cttgggaaag ttacgatgac ccataagcct gctccacagg atggctgtag 3900

cacagacacc ttcccctggg accccattg gctgtgtgtc ccccagcttc taattcctct 3960

agaatatcat gcccaggtta ggcactcttt ctgtattccc caaagcttca taacatggtt 4020

ccatatgtgt cctttttaag agtcttgtcg tttcatactc tcattttggc aagacacctt 4080

cgtcttagag tgcctacatc catttctgtt gaaactggtc atagttagca tttctccatg 4140

tctgtgcttt tatgccctcc tgaaagctgg ttccatttag gggtgttccc tgtcattttc 4200

gtgctgtgca atagttgatg aagataacat agtttataac gcacacctca aaattcattt 4260

cttctcacgt aacaactttc ttagtgcttg tacttgtgtg cctcttggag ttacttgttg 4320

ataggacagc gttaaggggg tcgtttcttt ctggtttgaa agttgagaag taggtcatca 4380

ctgtcatcgt catagtgggg acacactgag aggttacttt ctaccaaact gtttcctaat 4440

tgcactccct gcattgtctt attcagtccc gactttccca acgcctcgca gcccgatgat 4500

acagagacgg ggcagcagtg gagagctcgg ctcaaagtgc gaagttgttt agatttccac 4560

gttacacaaa cacacaagct tctcagggga agagcatgat gaatttcttt ctttttttttt 4620

tttttaaact aaaattagaa taggccgggc ccaatggctc acacctgtgg tcctagcact 4680

ttgggaggcc gaggcgggcg gatcacgagg tcaggagttt gagaccagcc tggacaaaat 4740

ggtgaaaccc catctgtact aaaaatacaa aaacattagc caggcgtggt ggtgggcgcc 4800

tgtaatcgca gctgcttggg aggctgaggc aggagaattg cttgaacccg ggaggcagag 4860

gttgcagtga gccgagatcg cgccttgcac tccaaccagg gagacagtac aagactctgt 4920

ctc                                                                4923
```

<210> 463

●

<211> 4355

<212> DNA

<213> Homo sapiens

<400> 463

```
gcgcgcgcca gtctggcact ctgggagctg ggtcctagca ccacagactt atccttcgcc      60

tgcactttcc gtctttcttc tctgggcgcc caccaacaat ggatggcaac tccctgctct     120

cggtaccaag caacttggag tcatcacgga tgtatgacgt tttggaatcg cagcagggca     180

gaggctgtgg cagctcagga agcggcccgg ggaactccat cacagcctgt aagaaggttc     240

ttcgcagcaa tagcctgctg gagtcaacag actactggtt gcagaatcag aggatgccct     300

gccaaattgg ttttgtagaa gacaagtctg aaaactgtgc ttctgtctgc tttgtgaatc     360

ttgatgtgaa caaggatgaa tgcagcacag agcacctgca acagaaactg gtcaacgttt     420

caccagatct tccaaaactt atcagttcca tgaatgtcca acaaccaaaa gaaaatgaaa     480

ttgttgtcct aagtggggtta gcctctggaa atctccaggc agattttgaa gtttcacagt     540

gcccttggct gccagatatc tgcttggtcc aatgtgcaag agggaacaga ccaaacagta     600

ccaactgcat catctttgaa atcaacaaat ttctgattgg tctggaactg gtgcaggagc     660

gacagctcca cctggaaaca aacatcttga aactggagga tgacacgaac tgttccttat     720

cttcaatcga ggaagacttt ctcaccgctt ctgagcactt ggaggaggaa agcgaggtgg     780

atgaatctag gaacgattat gaaaatataa atgtctcagc caatgttttg gaaagtaaac     840

agctaaaggg agccacccag gtggaatgga attgcaacaa ggaaaagtgg ctttatgctt     900

tggaagacaa atacatcaac aaatatccca caccattgat taaaacagaa cgatctccag     960

aaaacctaac aaagaacaca gccttgcaga gtctagatcc ctcagccaag ccatcacagt    1020

ggaaaagaga agctgtgggg aatgggagac aagccacaca ttattatcat tcagaagctt    1080

ttaaaggtca aatggaaaaa tcacaggcac tgtatattcc aaaagatgct tatttctcca    1140

tgatggataa agatgtacct tctgcatgtg ctgtggcaga gcagagaagc aacctaaacc    1200

caggagacca tgaagacaca agaaacgctc tccctcctag acaagatgga gaagtcacca    1260

ctggcaagta tgctacaaat ttagcagaat ccgtgctgca ggatgcattt attagattat    1320

ctcaatctca gtccacatta ccccaggaat ctgcagtcag tgtttctgta ggaagttctc    1380

tgcttcccag ttgctattcc acaaaagata cagtggtttc tcggtcatgg aatgagctcc    1440
```

ccaaaatcgt cgttgttcag agtccagatg gcagtgatgc tgccccacag ccaggcatct 1500

cctcctggcc tgagatggaa gtcctgttga aacctcaagc atcctctctg gagagaactc 1560

cagcagacaa ccccagagtg ctctagaagt ggcgttagct tgtgcagcca ctgtgattgg 1620

aactatttcc agtccacagg ccacagaaag actcaaaatg gagcaagtgg tctcgaactt 1680

tcccccaggg agcagtggtg cactgcaaac tcaagcaccc caaggactca aggaaccttc 1740

catcaatgag tactcctttc catctgcttt gtgtggcatg actcaggtgg ccagtgccgt 1800

ggctgtctgt ggtctgggtg aaagagaaga ggtgacatgc tcagtggctc caagtggtag 1860

cctcccgcct gcagctgagg cttctgaagc catgccccca ctttgtggtt tagcaagcat 1920

ggagcttggc aaggaagcca ttgccgaggg attgctcaag gaggctgctc tggttttaac 1980

aaggcctaat acctacagca gcattggaga ctttctggac tccatgaaca ggagaatcat 2040

ggaaactgct tcaaagtctc agaccctgtg ctcagaaaat gtcgtcagga atgaactggc 2100

acataccctg tccaatgtta tcctgaggca ttccattgat gaagttcacc acaaaaatat 2160

gataatcgac cccaatgaca acaggcattc atctgaaatt ctggacacct taatggaaag 2220

tacaaatcaa ctgcttttag atgtgatatg cttcacgttc aagaagatga gtcatattgt 2280

acggcttggt gaatgtcctg ctgtcctttc taaggagacc atcagaagga gggagacaga 2340

accaagctgc cagccatctg atccgggtgc tagtcaagct tggacaaaag ccactgaatc 2400

ctccagcagc tctccactta gcaattcaca caacacgagt cttgtcatca caatcttgt 2460

ggatggcatg tattcaaaac aagacaaggg tggagtgagg ccaggcctct tcaagaaccc 2520

cacgctgcag tcacaattat cacgtagtca cagagtgccc gattcttcaa ctgctacaac 2580

atcctccaag gaaatatatc tgaaaggaat agcaggagag gatacaaaaa gccctcatca 2640

cagtgagaat gaatgcagag tctcttccga aggacaaagg tccccaacgg tcagccggtc 2700

cagaagtggt tcccaggagg ctgaggagag tatccaccca aacacccaag aaaagtacaa 2760

ctgtgccaca tctcgcatca acgaagttca agtcaacctg tccttgttag gggatgacct 2820

gctgcttcct gctcaatcca cgcttcaaac aaagcatcca gacatctact gcattacaga 2880

ctttgcggaa gaattagcag acacggtcgt ctccatggca actgaaattg cagcgatttg 2940

ccttgacaac tccagtggaa aacaaccctg gttttgtgca tggaaaagag ggagtgagtt 3000

tctgatgaca cccaacgtac cctgccgatc cttgaagagg aagaaagaga gccaggggag 3060

cgggaccgct gtgaggaaac acaagcctcc ccggctcagt gagatcaaga ggaagacgga 3120

cgagcaccct gagcttaaag aaaagctgat gaacagggtt gtggatgagt ccatgaacct 3180

tgaagatgtc ccagattctg tcaatctttt tgccaatgaa gtggcagcca agatcatgaa   3240

cctaacggag ttctctatgg tggacggcat gtggcaggcg cagggctatc cccggaatcg   3300

gttactgagt ggcgacaggt ggagccggct gaaggcctcc agctgcgaaa gcattcctga   3360

ggaagactcc gaggccaggg cctatgtcaa cagcctgggc ttaatgagca cgctgagcca   3420

gccggtcagc agggccagct ctgtctccaa gcagtcgagc tgtgagagca tcaccgatga   3480

gttttccagg ttcatggtga accagatgga aaatgaaggg agaggatttg agttactgct   3540

ggattactat gctggcaaga acgccagcag cattctgaac tcagccatgc aacaggcgtg   3600

ccggaaaagt gaccacctca gtgtgaggcc tagctgtccc tctaagcagt ccagcacaga   3660

gagcatcact gaggagttct acaggtacat gctgagggac atcgaaagag acagcagaga   3720

aagtgcctcc tccagacgga gcagccagga ttggacagcc ggcctgctgt ctccttctct   3780

gcgatcccca gtgtgccaca gacagtcgtc catgccagac agcagatccc catgctccag   3840

gctgacagtg aatgtgccca tcaaagccaa ctctttagat ggctttgctc agaacttccc   3900

acaagatttc ctaagcgtgc agccggtcag tagcgcgtcc tcatccggtc tctgcaaatc   3960

tgactcttgc ttgtatcgga gaggtgggac tgaccacatc accaacatgt taattcatga   4020

aacgtgggct agctccattg aggctctcat gcgcaagaac aaaatcattg tggatgatgc   4080

agaggaagct gacactgagc ctgtttctgg tggctctccc tcgcaagcag agaagtgtgc   4140

aaatagatta gctgcgagca ggatgtgcag tgggccaact ctgcttgttc aggagtctct   4200

cgattgcccg aggaaagact ctgttaccga atgtaaacag cccccagtgt catctttgag   4260

caaaactgct tctcttacaa accacagccc tttagattct aaaaaagaaa cttcctcgtg   4320

ccaggaccct gtaccaataa aaccactccg acccc   4355

<210> 464

<211> 3741

<212> DNA

<213> Homo sapiens

<400> 464

agaggagagc ggacatggct gcacggttct ggcctcctgc ccagactagc tggctcgtcc   60

```
atggcgtctt tggtctgtgg ggctgtcctt cctgtcccct gccgctccca gcaccaggtg    120
gccactgttc gtgctgcgat agctgggacg ggaggactct gggatttcg gggcatggcc      180
tgtgctccag ctttccattg ttgtcactgc cccgtgatgg agcagagcag gccccagagt     240
ctttctgtcc catcccagct gttcccaccc agggtagccc aggcctgcat tgctttttctc    300
ctggacaccc tgccaggccc tcaggcctgg ctctccctct tgctggtcta gctctggcca     360
cctgcccaca ctgtgcatgc tggggcccca gcccagcccc ccaagtgtgg aagggctgg      420
ccctgggag gagctgcacc atgttcccag gatactcaag cctccatcct tgtccacttc       480
tttaaggaat gcagtttatt ctactccaag agattctgcc tcccttgtgt ccgggagaac     540
atcaatgctt ttcctcagga aattcggcaa gacttggaga aaaggaaagc tccatcaaag     600
aggacccccca gccagcccgg ttctcggacg tgagtgcaac tggggctagg tcatcgggcg     660
gcaccctgca cagagctcct gggccagcct gcgccaggga tgctgctgag ctgggagccg     720
ccatgcctgg ccttgtttct ggaccactgg gagcagcact gcagcccagg ggagctggag     780
tccagcttgg agcagccaca ggcccaggga gctgtagcaa gagggtagtc caaaggcaga      840
tgccagacaa gacacagcca ggaacccggc caggtccccc cacatgcccc tcagggccca     900
ggcctgagtg agtgctgctc agatgtgact gagagggatg acctccttca gcagggcagc     960
tcctaagagg ctgcgtgcag gtgcgtgtgg ggggagatgc cacactgtgt cggggccatg    1020
gtgcactgta ggtggctgca atggtctctc tgtaaggaaa atcactgaca gcagctcctt    1080
ctggacccag tctggaaggt ctagaggggg atagaatttt tatttcatat ccttatgtgg   1140
tgcttggaaa atgttttttaa ccttgaccat gtattatgtt tataattaaa aacccaaaga   1200
accagctcat gtttggaaaa ggaatcttcc actgaaacat ttggataccc gacgttctcc    1260
ctggacactt ggcccggcaa tagttggggt ctcctgggaa gctgagtgct ggcttctagc    1320
ctctccagtt ccctcagact ctgtcttcag ctcgggcccc tccgttctgt ctccctcgac    1380
tccaagtcag gaataccgtg ggcttcctgc cctcacccca cacctcaaga ccatcccact    1440
gcttgcctgc ttgccccctg ccatctcgca ctcagccctg ggtgcctgtg aagcctggcc    1500
ccactgcctg ccggggggttc ctgcagcacc cccctactcc aggctcccca tctccctgaa   1560
gcttccaggg tagcagctgg tgggacactg atctgtgagc tctggaatgt ctgcttagaa    1620
ttctgagagg caggaactgc tctgtctttg taactactca aggccaactg tcacatgaag    1680
gaatgaataa agagttttta ctgacttgtg cactgatgga ctttaagatg ctcactgctt    1740
taaaagttcc cgttgtatgt gacttcagac gaaaggatgt cgtattccgg agccagattg    1800
```

tccttgatcc attctgtatg ttgaaggaca caaaagggac tgtgcaggtg gagacagcct   1860

ccatgagggg cgcagggact gttctggcgg agggcggacc ccacagctgg ggacttggtt   1920

cttttagacc aaacagtcca tctcgcagca tcactcaaaa ctcaccaaaa aattttaaaa   1980

aatagtttat tttttaaaac cattaaggca aaactgtacc ctgaaattaa ctctgtacat   2040

tcatcagtct tacagtagga catcccaaac acagaagttc ccatatattc aggatataaa   2100

tcaatacatg tggtcagttc agtctcctaa taggaaaacg aagacccaag attttttttt   2160

aaaattaagg ttatttttata gccattttct aattgcctgg aaccaatcag ttcatgtgac   2220

tagaaaaatt actttcgctc ttctctgcac atccttgatt ccggaggtcc tggatgcccg   2280

ctcccccccac caggagagag gtatgaagtt ggagagagga tgctgggggcc tgtgtggcag   2340

ttcctacttt ggaactgcac ctttttagca caaataagaa gctgtaagcc ccaaaatact   2400

gagagtataa ggcactcact agtagagcac atgtggagag tctgggccca gtccttgctc   2460

tgggatctgc ctcattctcg cgtgtgtttc tgtcaaccct ctctcttagg gttttagcct   2520

aatggcatta tgaatcccag agggtgtaac caatatgcac caagaagttt tgccaagtta   2580

ttggaaacaa ggtatgggga gactcacggg gtctgtggtt tctgctttct gctttgggtt   2640

gggccacctg gaggatgcca gagaaccggc acgtgcaaag aatttccatc aggacatttc   2700

caattgccag cgttctttgg taataaccca taggtaacag ttccctgaag agcagacagc   2760

tatttactaa acaagaatag tgaagggtct ttagcgaaac actgttgtat gaaatcggtg   2820

gcctctaata cggagtctaa ggcctcgctg gtggaagtga ctagagatag cctctcttgt   2880

gctctgtgca tatacagtgt ggtaaaggga acagatttcc acattgaaag taaattctgc   2940

atggctcagg ataaatgaag agctgtgtgt gtgtgtgtgt gtgtgtgtgt gtgcacgcac   3000

acgtgtacgc agtgtatttt agatgtttga tttcagcttc ctttgtgttt ccaatagggt   3060

caagagccag gcttttaaga atatgagtca attaacactg atttcaaaag aatccaaatg   3120

tttcttatta aatgagtgat tgtaagttag taaaatattt gtattaggat atttttcaaa   3180

aagtcaaatc acagtattta ggatatagct attaacgtag ttctttttac cacacaatgt   3240

agaaaaaagt gatatttaac atgaacactg taactttacc aaaaagagta ctacatggtc   3300

ttcatctttt gtgaggtaca tgagaaaagg aactgactgt gccttaaaaa aagtgaagtt   3360

gccaaaagtg agtgatttta ttgtgaaatg atcggccagt cactcgtctc cggggcctga   3420

aggctgaccc tctctgactt gaggcacagc caaggcctgg gggtccgggg aaggtgcccg   3480

actgtgtccc agggctgcgg catgccccccc cacgcccggt caccactttt cctaggagcc   3540

```
aggctgcgtg gactgggggc ctgtttgtgc accagtttgc acggcacttt atcaattcat    3600

taaatgaatg gatttttggat gctggatgtg tgggcagaag aggggcaaga gaagaggtgg    3660

caggtagact ccctcctcct cacatttgac ccaactagca aacttaaaaa aaataaaata    3720

aaataaaagc tgacccccct c                                              3741
```

<210> 465

<211> 3804

<212> DNA

<213> Homo sapiens

<400> 465

```
ttcatcccct gccaggagag catagtagct cacatttatt gagttcttag tacacgctgg     60

gcactgttct aggctttta catgaattaa ctcattaaat actcagaaca aaaccatgag    120

gcaggtacta ttataatatt atctccattt tgtggacact taggaaagat taatttgccc    180

gagtttgcac gactaataat tttcagaatc gagatttgaa tcctggagcc tgtgctccta    240

accaaaccac catctgcctc tcctgagccc attgtcctta acttcttgcg tcatgtgtg     300

ctgaagagaa tgtgatcaaa gccctggacc ttctccctag gaaaacgcag gtaaacagaa    360

ttttgcatat ttcagggact ttggggacac ctaagaccca tctactgtcg acctcagact    420

tagaagctct atttatctca tacatcctgg agagaattgt ccagggacaa aaacagaagc    480

gccgccagcg ccgcaggact tcgcctctgc aaacgtgtga ggagagctgc gctgcgctga    540

gctgcgtggt gacggagatg cccgttcgct cgggatcagg aacggtgagc tcctgggacc    600

gcaatgccct gagaacgcag ccggggtgctg agcctccgga gtccggtagc tgaatgaaat    660

acgcagggat caccagccgg acccaaatct tgcgtccctg ccagcatcct ggagtcctaa    720

gaggcaggga ttggagcgga caggatctca gaactctggt cccgggcgca caacggcgga    780

gtcgctgttc ctggtgctga aacgctcagt cctggaagaa cgtggccgcc tgcccgcctg    840

gtaccgcgcc gcggccgctg cggggaactg tccagtgctg aaaacggatg cggcccggcc    900

cgcagagctc agacccaagc ctgccgcacc cagcggagct cgaaccgagc tcctggaagc    960

gctgacgcag agcgcaggga gagccggagc ggcgagctcc aagcctggca tggacctgca   1020
```

gagacccgat tcctaccagg gaggagctgg ccctgacttc aacgaccacg tcctgcataa 1080

gaccatcctg gtgggtgaca gtggtgtggg aaagacgtct ctgctggttc agttcgatca 1140

gggcaagttc atccccggct ccttctcggc cactgtgggc atcggattca cgaacaaggt 1200

ggtgactgtg gatggcgtga gagtgaagct gcagatctgg acaccgctg ggcaggaacg 1260

gttccgaagc gtcacccatg cttattacag agatgctcag gccttgcttc tgctgtatga 1320

catcaccaac aaatcttctt tcgacaacat cagggcctgg ctcactgaga ttcatgagta 1380

tgcccagagg gacgtggtga tcatgctgct aggcaacaag gcggatatga gcagcgaaag 1440

agtgatccgt tccgaagacg gagagacctt ggccagggag tacggtgttc ccttcctgga 1500

gaccagcgcc aagactggca tgaatgtgga gttagccttt ctggccatcg ccaagtgaga 1560

gctgggcagg gaagggaagt gtgcggggca gggcggcaca ctccaggaat ccagtagggc 1620

ccggcccctg gcccagcccc tggacacacc tgcattctgc aggctgaggt ccatttgctc 1680

tgggagcact gggccactgg gagaggggag ggggcggctc agctcctcac cccagcccag 1740

cccagcccag cccagcccat tgtctcttct tcaagggaac tgaaataccg ggccgggcat 1800

caggcggatg agcccagctt ccagatccga gactatgtag agtcccagaa gaagcgctcc 1860

agctgctgct ccttcatgtg aatcccaggg ggcagagagg aggctctgga ggcacacagg 1920

atgcagcctt cccctccca ggcctggctt attccaagag gctgagccaa tggggagaaa 1980

gatggaggac tcactgcaca gccgcttcct agcagggagc tatactccaa ctcctacttg 2040

agttcctgcg gtctccccgc atccacaggg agggtaaaac acttagcttt tattttaata 2100

gtacataatt taataccaaa aaaggcgcct ggatccccaa aaaaccgagg ctgggagcta 2160

gtggcccttt tgctttctag acttggggg gccggccctc cctcctaagc ataacaaagg 2220

tggtgttgct ccagctcagc cccaggggac acagatgcac tttgggggtg agggcaggta 2280

atgactccat cgcaccctca gttcagctgg acagaggctc aggtgacccc agccttcact 2340

gtctcccgct ctccaggagc ttatcttcgc cccatctccc aaataagtgg gcccttgtgc 2400

tgtgaggaag accaaagcct cagggaagat gagagatatg gagatgggag ggggaggaca 2460

aggggcagag agtagggtct agctggctat ctctggcctt actaacaccc ccctggaggc 2520

atgccccttt tctccagcac acaagcacat tggggcacct ggaaatattg gttccaggct 2580

cctgttctct ggacttcaga tcctggggga gcccctcccc cccctgaatc cctggcttag 2640

ctaccttcct gcctgtgcac ctaaaaacct caggtcagaa ctaggaaaag agttttgttt 2700

ttattttttt gaaatggagt ctcgttctgt cgcccaggct gaggtgcagt agtgcaatct 2760

ccgctcacta caacctccac tccctggggc tcaagcgatc ctcccacctc agcccccgaa　2820

gtagctggga ctataggtgt gtaccatcac acctggctaa tttttgtatt ttttgtagac　2880

acagggtttc gccatgttgc ccaggctggt cttgaattcc tgagctcaag caacctgccg　2940

gcctcggcct cccaaagtac tgggattaca cgcagaaggc accatgccca ggctagatgt　3000

gtcttatccc aatcctttgg caggcatgca gctccacagg cgatttcttc aagcagctga　3060

agtgtttagc cctcctgggt taagagccag ataaggagaa atccctttcc taggtttgga　3120

atgtgttgtg aaaaaaaaga gaaatccctg gctcctggag ctggtgggag acaagattaa　3180

gcaaacctcc cctgacatgt atccctttga ccccaagctc tgcctcctcc ctgaccaccc　3240

atgccctttc ctttaacttc tcaaacagat accagggcct aaactgcttt acctcccctc　3300

ctactgagtc aggttaggtg gtgggaggtc acccatttcc gagttaaacc aatgcaatat　3360

gagtaaaaca aagtcatgtg ggtatgtctg gggtagagag aggggtagca agttcatgtg　3420

tcctccttgg tcacatatct cccaaagctc tgatccctgc catgggaagt ggacaggaaa　3480

catgaggtca tgacctgcag gcatctttac tgcagctctg ccggcctgga gggggagagg　3540

gggaggaaga agtatgcgct gcacatttct gaggctactg catttgcttt caaggcagaa　3600

atcttgctct gagcagtcag cggctccagt ttgggcccga taaggaagtt ctccgtggcc　3660

tccctcaggc agagcaggga ggaggctgac attgccagtc tcttctgggg cccaaggcag　3720

gttgcaggag atccaatccc atagacagct ctgggcctct tgcatttgag tttttcagaa　3780

ttaaactgca gtattttgga aagc　3804

<210> 466

<211> 4235

<212> DNA

<213> Homo sapiens

<400> 466

tgtatatcaa acaagctcct ggctgaggct gatgctaagg gcccagggac cacacattgt　60

gtaacaaggc attaggagat cctggttgca accgtaattt cttcagtccc tattttgaga　120

ttaagaaaac actttcaaaa gagacatttt gccacctgat cttcatcttg ctggttctga　180

```
ccatcctgca agaaactgct ttgaatggac aggtgagctg gtatttaaag gcaaagaatg    240

atccctgagc taaggctgga gagcctccaa gagtctgcat tatgggggtgt cagaattctt   300

ctttctggga gctaagaaga gcattgttta cagagaaaaa gtccagagcc cttggtctca    360

aaggcagctt tacttcgtat gggagaaata tgaggctgag gaagagatgt attttttat    420

tccaaaggat gcaatttttt ttctcagctt atcaaagcat tacataccct ttggaaatca    480

tttgcaagat acatgaaata acaaaaacac tgtttaactc attccagagc tcaatgtcta    540

gcaataacca ctatttatca ctgttatgta tttacagtga gtttttaagc tagatgaaga    600

cacaaactgg tagataaaac aatggagatt acactgcact tttagattta tgtgctgtga    660

ttggtttaac aattctgtca gaagcatcac cctgggttat taaggattct ctgtatgcat    720

aattttttgat ggtgatataa ttttccattg tttgtctcca tcataatttc cgtaactatt   780

cccatattgc tgttccttca agttttttttc taagttttca ctgttatgat taatgttgaa   840

ataaatctca gtttacattt tttgttattg ccttacaata aatcgctagg agtgaactta    900

gtggaacaat ggtcttagac atttttagga tgtttgttcc atactgtcaa gtttatttcc    960

agaaatactg ttttctagaa aggattttt tttttctctc caagaagtgt ccctggatcc    1020

agagactgag cccattctga gagccttcct cctcagggaa gctagcactg tgtctcagct    1080

atttgctttg caattgtttt cctagtcttt cctccctctc attatcagaa aagtggcagt    1140

ggaggaccaa tttggttctt aatgcactct tactaattgc accgtatgtt acacatttgg    1200

gtcacggtag ttttgaattc tttttgtgtg tctttggtaa agaaaatgaa aatgagccaa    1260

cagagaagtg gatcatgctg tgggaagccc actacccatg cctcccctg caccgtccat     1320

ccctgtaggc caccaggaca tgtccataag aggactggga aaaagaccca ctcaatattg    1380

cctttctggt ccattttgat agtctgacag cttaattgca gttaagctta actgaaattc    1440

aattgcctgt actttaattg tgggtgcttc catatcccaa ggttctctct tgttgttgtt    1500

caaagtcgca catctttaca tgtgaatacc atggcctatc caagatgtgg tggcctgtat    1560

cacctggcag cctcccgtat catcctggtg ttgccattct ggtgcagagt cttgtctgta    1620

ttgagcatga gtcagggcat atcactgagg accccaggga gcccagggtc tgcaatgaag    1680

gagaaagcat gtaggagact tgggtacagt gatacagatg ccaactctga ggtgagcaag    1740

gaggaggcat ggggaagatg aaccgcaaat cccgaggaca gactccaagt ggtgggagga    1800

agatcctgaa gcacaaatct gataatccct cagtttgatc tcagcctggc ttcagacaca    1860

gccaagatcc tagactaagc ctggatcttg gtcacaacct ggactcacct ccaggctcat    1920
```

tgagccctga cacaagccca tgccaactta gattctggcc attggagtaa aacactacct 1980

ggcaaccatt tgagcctgaa ccccaactga gaataatcca attttttccat tcaaggaata 2040

tttattgagt atctacagca cgcctaattc tgggtcagtt tctgactttg aagcctcacc 2100

acctctttttc aacattagtg tgaaatttaa tgagaaaata catgtgccca gttagttctg 2160

aagccatcct cataaaatta gtaaaatcaa ttgccaggtg ttttgacaaa agtagacgcc 2220

tggaatacaa ttacagctca acgtaacggt taaccagcac acccctttggc ccacttgctt 2280

atagtcactt actttccgta agtcacagac caggtcacaa agcactaact ttccttagtt 2340

gctcctatag ataacatctt tatcattgag aaatatcaag ttttccattt aagttatttt 2400

tcagaactca tattccagtg aaagtaccaa tgttagctaa cctgaaggtc cccaccaagg 2460

agctcactca actgaagaat gcagttgttg ctacatcctg atgatttcac cccctaaccc 2520

tgaccaaatg gtgatcacaa tcttccagcc cctttctctc cacaattccc tttaaaaccc 2580

tagcccaaaa cccctcaggg aggcagattt gaggttcttc ctgtctcttc atttggctgc 2640

ccaatggatt atgaaactct ttctctgctg taactcctgc tgtttcagtg tattggtctg 2700

ttactgcaca ctgagcaaat gagactggtg gtcatgtaac atctccattg ctcagcagtc 2760

accattatgt accctcacca cagcctgagc cctcctaacc ccagtcatgg ctggggggac 2820

agtagtcttt tcagagtgtg gagagaggtt ctgtaggact tcctagcagt cctggtaaag 2880

acttgtttcc acaggccttg cacacattgt tctctgggtc tcatagctga cacatcctgc 2940

tgagtcaccc ccactagctt tggtttctgg cccatccccc tctttctttg cttttatctc 3000

agaggaagca ctccggactt ctggagaaaa cctttccttc ttcagcttcc ctccactcac 3060

aaagctactt cctctaaact cagatgttct aagtgtagaa aggatggccc ctctgggggtt 3120

aggaagagga tatttgcttg cctcttccat aggcaattat attttccttt gacactggac 3180

agagctctgt atccctgacc tgtggcagaa tgtggttgga ggttgtcacc tattagtgac 3240

tctaagtgac tattcctgat tcactcggcc agtggtgtta ggctcctagt ggcacaggag 3300

ggcatgatgt catgggcctg gcttcctctt caagaggaaa tatgtgggca ttctgaacat 3360

ttctgttctg tatgtctgcc aatctggcac cctcctacca gacaccaacc ttcagagtgc 3420

atgagcattg cctgtaattc aaaagtgatt ctggattctg aataagcgct cagtcatcag 3480

atctcactgt gagtgcatct gcatctctct cagagataca agggttggca gacatggata 3540

tactcgtttt tactttgcag agaactggac cagcagaacc caccaggata gggctctttt 3600

tatgttactg ttagggtgca caaaacaatt tcccaaaata tagtgcttgg gtatgctgat 3660

tgcttttgag aattgaaagg actcagaaat aaacctcaga actatggtct ctctctgatc   3720

ttttccacac ctccctgtct ctctcaccct tttctctgaa gcacttggga gggagtgtct   3780

ctggaatttc cttatacgat taacaaaact tctttccaaa agtaatgcaa ttgtcttaag   3840

acttcctccc taagaatctc atcaaataac cagggaagat caaccacctg agaagagaag   3900

agactgtgag tcgtcaccac acccagacat catctgcttt tctgagagca gctccaagtg   3960

ataacctgga ggactttatc tgcaaaataa aacaaccttt gtccctgtac agcgccacct   4020

ctcccattct agtagtgtct gactccctct gcctgggtcc attcattctt tctaatgatt   4080

gactgctcct caaaagaatt gtctacattt ccatctgtt ccctcttgtg tgaagaagga   4140

tgcataagct cttatactac actggctttt ttgggtgatt accctgtgat tcccccctgt   4200

acatgttaat aaatttatat gccttttctc ttatt   4235

<210> 467

<211> 4245

<212> DNA

<213> Homo sapiens

<400> 467

tagtgaaatt ggtaacggga agtttgatcg cttgtcatcg gcttgcagct gctgtggccg   60

ggcctggagg cttaagtggc tcgacactag tggatggccg gtacacttac cgggagtatt   120

tagaggcaca tctaaaattt ctagcgtttt tcttgcaaga agctactctg tatctgggct   180

ggaatcgtgc caaggagatc tgggagtgtc ttgtaactgg ccaggatgtt tgtgaattag   240

atagagagat gtgttttgaa tggtttacaa aaggacagca tgatcttgag agtgatgttc   300

agcagcagct cttcaaggag aaaattctta aattggagtc atatgaaatc actatgaatg   360

gttttaactt atttaaaact ttttttgaaa atgtgaatct ttgtgatcat cgattgaaaa   420

gacaaggagc tcagttgtat gtagaaaagc tggaattgat aggaatggat ttcatttgga   480

aaatagccat ggaatcacct gatgaagaaa ttgctagtga agctattcag ctaatcataa   540

actatagtta cattaatcta aatcctagat taaagaagga ttcagtatct ttacataaga   600

aattcattgc tgattgctac acaagattag aagcagccag ttcagcactt ggtggcccca   660

```
ctctaacaca tgctgtgacc agagcaacaa aaatgcttac agcaactgcc atgccaactg   720

tagcaacctc agttcagtct ccttatagat ctactaaact tgtaataatt gagagattgc   780

tgcttctggc agagcgctat gtgatcacta tagaggattt ttactctgtt ccacgaacta   840

ttctacctca tggtgcctca tttcatggac atcttttaac ccttaatgtt acctatgagt   900

ctaccaaaga taccttcact gtcgaggctc acagtaatga aaccataggg agtgtccggt   960

ggaaactagc caagcagttg tgctctcctg tggataatat acagatattt acaaatgata  1020

gcctgctgac agtgaataaa gatcaaaagc tactccacca actgggcttt tctgatgaac  1080

aaatccttac agtgaagact tctggcagtg gaccccatc tgggagttca gcagattctt  1140

caaccagctc cagcagcagc agcagtgggg tttttagttc ttcatatgcc atggagcagg  1200

agaaatccct ccctggtgta gtgatggctc tcgtatgtaa cgtatttgac atgctttatc  1260

agctcgccaa tctggaagag ccaaggataa ctctacgagt acggaagctt ctgctcttga  1320

tacccactga tccagccatt caggaagccc ttgatcaact tgattcttta ggaagaaaga  1380

aaacattgct gtctgaatca agttctcagt cctcaaaatc tccatccctg tcatcaaagc  1440

aacagcacca gccaagtgcc agttcaattt tagaaagtct gtttcgatct tttgccccgg  1500

gaatgtctac cttcagagtg ctctacaact tagaagttct aagctccaaa ctcatgccaa  1560

cagctgatga tgacatggcc agaagctgtg ccaaatcctt ctgtgaaaac ttcctcaaag  1620

ctggcggttt gagtttggtt gtaaatgtca tgcagagaga ctccatccca tcagaagtag  1680

actatgaaac aaggcagggt gtttattcca tctgtctaca gcttgcaaga tttttacttg  1740

tcggacaaac aatgtccacg ttattagatg aagacctcac caaagatggt atagaagcac  1800

tttcttcccg cccattccga aatgtcagcc ggcagacaag cagacagatg tccttatgtg  1860

gtaccccaga aaagtcatcc taccgacagt tgtccgtgtc tgataggtct tctattaggg  1920

ttgaggaaat catccctgct gctcgagttg caatacaaac aatggaagta agtgatttca  1980

cttctactgt ggcttgcttc atgagattgt catgggctgc ggctgcagga cggcttgatc  2040

ttgttgggag tagccagcca attaaagaaa gtaattccct gtgtcctgct ggaattcgaa  2100

acagactcag cagttcagga agcaattgca gctctggaag tgaaggagaa ccagtagccc  2160

tgcatgcggg aatctgtgtt cgacaacagt ctgtatccac caaagactcg ctgattgcgg  2220

gagaggcttt gtctcttctt gttacgtgcc tacagcttcg gagccagcaa ctggcatctt  2280

tctataactt gccctgtgtt gctgatttca tcattgatat tctgctcgga tcaccaagtg  2340

ctgagattcg ccgggttgcc tgtgatcagc tgtacactct tagtcagaca gacacatcag  2400
```

```
cgcatccaga tgtgcagaag ccaaatcagt ttcttctagg cgtaatcctc acggctcagc 2460

tgcctctctg gtctccaact agtattatga gaggagtcaa tcagagactg ttatctcagt 2520

gtatggagta ttttgatttg agatgccagt tattagatga tctgacaact tcagaaatgg 2580

agcagttaag gatcagccca gctacgatgc ttgaagatga gattacttgg ctggataact 2640

ttgaacctaa tcgtacagct gaatgtgaga ccagtgaagc ggacaacatc ttactggcag 2700

ggcacttacg cctcatcaag acccttcttt cactctgtgg ggcagaaaag gaaatgcttg 2760

gttcatcact cattaaacca ttgttagatg acttcctttt ccgagcttct agaattattt 2820

taaatagtca ttctccagct ggcagtgccg ccatcagtca acaggacttt catccaaagt 2880

gtagtacagc gaatagccga ttggcagcct atgaagtcct tgtgatgttg gctgatagtt 2940

caccttcaaa tcttcaaatt attataaaag aactgctttc tatgcatcac cagcctgacc 3000

ctgctcttac caaggagttt gattaccttc ccccagtgga tagcaggtcc agttcagggt 3060

ttgtggggct gagaaatggt ggtgcaactt gttatatgaa tgcagtcttc cagcagctgt 3120

atatgcaacc tgggctccct gagtcattac tttcagtgga tgatgacaca gacaatccag 3180

atgatagcgt gttttaccaa gtgcagtctc tctttggaca tttaatggaa agcaagctgc 3240

agtactatgt acctgagaat ttttggaaga ttttcaagat gtggaataaa gaactttatg 3300

tgagagaaca gcaggatgca tatggattct ttactagtct cattgatcag atggatgaat 3360

acctcaagaa aatgggggaga gaccaaattt ttaagaatac atttcagggc atctactctg 3420

atcagaagat ctgtaaagac tgtcctcaca gatatgagcg tgaagaagct ttcatggctc 3480

tcaatctagg agtgacttct tgtcagagtt tggaaatttc tttggaccaa tttgttagag 3540

gagaagttct agaaggaagt aatgcgtact actgtgaaaa gtgtaaagaa aagagaataa 3600

cagtgaaaag gacctgtatt aaatctttac ctagcgtctt ggtaattcac ctaatgagat 3660

ttgggtttga ctgggaaagc ggacgctcca ttaaatatga tgaacaaata aggtttccct 3720

ggatgctaaa catggagcct tacacagttt caggaatggc tcgccaagat tcttcttctg 3780

aagttggggga aaatgggcga agtgtggatc agggcggtgg aggatcccca cgaaaaaagg 3840

ttgccctcac agaaaactat gaacttgtcg gtgtcatcgt acacagtggg caggcacacg 3900

caggccacta ctattccttc attaaggaca ggcgagggtg tggaaaagga aagtggtata 3960

aatttaatga cacagttata gaagaatttg acctaaatga cgagaccctg gagtatgaat 4020

gctttggagg agaatataga ccaaaagttt atgatcaaac aaacccatac actgatgtgc 4080

gccgaagata ctggaatgcc tatatgcttt tctaccaaag ggtgtctgat cagaactccc 4140
```

cagtattacc aaagaaaagt cgagtcagcg ttgtacggca ggaagctgag gatctctctc 4200

tgtcagctcc atcttcacca gaaatttcac ctcagtcatc ccctc 4245

<210> 468

<211> 5698

<212> DNA

<213> Homo sapiens

<400> 468

agataaacag ttacctcatg gaggccagat actctctttc ccgattccgt ctgctgactg 60

gctccttaga agctgtgcaa gttcaggtgg acaatcttca gaatctccaa gatgatctgg 120

aaaaacagga aaggagctta cagaaatttg gctctatcac caaccaatta ttaaaagagt 180

gtcacccacc cgtgacagaa actcttacca atacactgaa agaagtcaac atgagatgga 240

ataacttgct ggaagagatt gctgagcagc tacagtccag caaggcccta cttcagcttt 300

ggcaaagata caaggactac tccaaacagt gtgcttcgac agttcagcag caggaggatc 360

gaaccaatga gctgttgaag gcagccacaa acaaggacat tgccgatgat gaggttgcca 420

catggattca agattgcaac gacctcctca aaggactggg cacagttaaa gattccctct 480

ttgttctcca tgagctggga gagcaactga gcaacaagt ggatgcttcc gcagcatcag 540

ctattcaatc ggatcaactc tctttgagtc aacacttgtg tgccctggag caagctctct 600

gcaaacagca gacttcatta caggctggag ttcttgatta tgaaaccttt gccaagagtt 660

tagaagcttt ggaggcctgg atagtggaag ctgaagaaat actacaaggg caggaccccta 720

gccactcatc tgacctctcc acaatccagg aaaggatgga agaacttaag ggacagatgt 780

taaaattcag cagcatggct ccagatttat accgtctaaa tgagcttgga tataggttac 840

ccttgaatga taaggaaatc aaaagaatgc agaatctgaa ccgccattgg tctctgatct 900

cctctcagac tacagaaaga ttcagcaagt tgcagtcatt tttgctacaa catcagactt 960

tcttggaaaa atgtgaaaca tggatggaat tcctagttca gacagaacaa aagttagcag 1020

tagagatttc aggaaattat cagcaccttt tggaacagca gagagcacac gagttgtttc 1080

aagccgagat gttcagtcgt cagcagattt tgcactcaat cattattgat gggcaacgtc 1140

ttctagaaca aggtcaagtt gatgacaggg atgaattcaa cctgaaattg acactcctca   1200

gtaatcaatg gcagggagtg attcgcaggg cccagcagag gcgggggatc attgacagcc   1260

agattcgcca gtggcagcgc tatagggaga tggcagaaaa gcttcgtaaa tggttggttg   1320

aagtgtccta cctccccatg agtggtctcg gaagtgttcc tataccactg caacaagcaa   1380

ggaccctctt tgatgaagtg cagttcaaag aaaaagtgtt tctgcggcaa caaggcagct   1440

acatcctgac tgtggaggct ggcaagcaac tccttctctc ggcggacagt ggcgctgagg   1500

ccgccttgta ggccgaactc gctgaaatcc aagagaaatg gaaatcagcc agcatgcggc   1560

tggaagaaca gaagaaaaaa ctagccttct tgttgaaaga ctgggaagaa tgtgagaaag   1620

gaatagcaga ttccctggag aaactacgaa ctttcaaaaa gaagctttcg cagtctctcc   1680

cggatcacca tgaagagctc catgcagaac aaatgcgttg caaggaatta gaaaatgcag   1740

ttgggagctg gacagatgac ttgacccagt tgagcctgct gaaggacacc ctctctgcct   1800

atatcagtgc tgatgatatc tccattctta atgaacgcgt agagcttctg caaaggcagt   1860

gggaagaact atgccaccag ctctccttaa ggcggcagca aataggtgaa agattgaatg   1920

aatgggcagt cttcagtgaa aagaacaagg aactctgtga gtggttgact caaatggaaa   1980

gcaaagtttc tcagaatgga gacattctca ttgaagaaat gatagagaag ctcaagaagg   2040

attatcaaga ggaaattgct attgctcaag agaacaaaat acggctccaa caaatgggag   2100

aacgacttgc taaagccagc catgaaagca aagcatctga gattgaatac aagctgggaa   2160

aggtcaacga ccggtggcag catctcctgg acctcattgc agccagggtg aagaagctga   2220

aggagaccct ggtagccgtg cagcagcttg ataagaacat gagcagcctg aggacctggc   2280

tcgctcacat cgagtcagag ctggccaagc caatagtcta cgattcctgt aactcggaag   2340

aaatacagag aaagcttaat gagcagcagg agcttcagag agacatagag aagcacagta   2400

caggtgttgc atctgtcctc aacctgtgtg aagtcctgct gcacgactgt gacgcctgtg   2460

ccactgatgc cgagtgtgac tctatacagc aggctacgag aaacctggac cggcggtgga   2520

gaaacatttg tgctatgtcc atggaaagga ggctgaaaat cgaagagacg tggcgattgt   2580

ggcagaaatt tctggatgac tattcacgtt ttgaagattg gctgaagtct tcagaaagga   2640

cagctgcttt tcccagctct tctggggtga tctatacagt tgccaaggaa gaactaaaga   2700

aatttgaggc tttccagcga caggtccacg agtgcctgac gcagctggaa ctgatcaaca   2760

agcagtaccg ccgcctggcc agggagaacc gcactgattc agcatgtagc ctcaaacaga   2820

tggttcacga aggcaaccag agatgggaca acctgcaaaa gcgtgtcacc tccatcttgc   2880

gcagactcaa gcattttatt ggccagcgtg aggagtttga gactgcgcgg gacagcattc 2940

tggtctggct cacagagatg gatctgcagc tcactaatat tgaacatttt tctgagtgtg 3000

atgttcaagc taaaataaag caactcaagg ccttccagca ggaaatttca ctgaaccaca 3060

ataagattga gcagataatt gcccaaggag aacagctgat agaaaagagt gagcccttgg 3120

atgcagcgat catcgaggag gaactagatg agctccgacg gtactgccag gaggtcttcg 3180

ggcgtgtgga aagataccat aagaaactga tccgcctgcc tctcccagac gatgagcacg 3240

acctctcaga cagggagctg gagctggaag actctgcagc tctgtcggac ctgcactggc 3300

acgaccgctc tgcagacagc ctgctttctc cacagccttc ctccaatctc tccctctcgc 3360

tcgctcagcc cctccggagc gagcggtcag gacgagacac cccggctagt gtggactcca 3420

tccccctgga gtgggatcac gactatgacc tcagtcggga cctggagtct gcaatgtcca 3480

gagctctgcc ctctgaggat gaagaaggtc aggatgacaa agatttctac ctccggggag 3540

ctgttggctt atcagatgta atgatccccg aaagccctga ggcctatgta aaactcacag 3600

aaaatgcaat caaaaatacc tccgggggacc acagtgccct agagtcacag atccgacaac 3660

tgggcaaagc cctggatgat agccgttttc agatacagca aaccgaaaat atcattcgca 3720

gcaaaactcc cacggggccg gagctagaca ccagctacaa aggctacatg aaactgctgg 3780

gcgaatgcag tagcagtata gactccgtga agagactgga gcacaaactg aaggaggaag 3840

aggagagcct tcctggcttt gttaacctgc atagtaccga aacccaaacg gctggtgtga 3900

ttgaccgatg ggagcttctc caggcccagg cattgagcaa ggagttgagg atgaagcaga 3960

acctccagaa gtggcagcag tttaactcag acttgaacag catctgggcc tggctggggg 4020

acacggagga ggagttggaa cagctccagc gtctggaact cagcactgac atccagacca 4080

tcgagctcca gatcaaaaag ctcaaggagc tccagaaagc tgtggaccac cgcaaagcca 4140

tcatcctctc catcaatctc tgcagccctg agttcaccca ggctgacagc aaggagagcc 4200

gggacctgca ggatcgcttg tcgcagatga atgggcgctg ggaccgagtg tgctctctgc 4260

tggaggagtg gcggggcctg ctgcaggatg ccctgatgca gtgccagggt ttccatgaaa 4320

tgagccatgg tttgcttctt atgctggaga acattgacag aaggaaaaat gaaattgtcc 4380

ctattgattc taaccttgat gcagagatac ttcaggacca tcacaaacag cttatgcaaa 4440

taaagcatga gctgttggaa tcccaactca gagtagcctc tttgcaagac atgtcttgcc 4500

aactactggt gaatgctgaa ggaacagact gtttagaagc caaagaaaaa gtccatgtta 4560

ttggaaatcg gctcaaactt ctcttgaagg aggtcagtcg tcatatcaag gaactggaga 4620

agttattaga cgtgtcaagt agtcagcagg atttgtcttc ctggtcttct gctgatgaac 4680

tggacacctc agggtctgtg agtcccacat caggaaggag cacccccaaac agacagaaaa 4740

cgccacgagg caagtgtagt ctctcacagc ctggaccctc tgtcagcagt ccacatagca 4800

ggtccacaaa aggtggctcc gattcctccc tttctgagcc agggccaggt cggtccggcc 4860

gcggcttcct gttcagagtc ctccgagcag ctcttcccct tcagcttctc ctgctcctcc 4920

tcatcgggct tgcctgcctt gtaccaatgt cagaggaaga ctacagctgt gccctctcca 4980

acaactttgc ccggtcattc caccccatgc tcagatacac gaatggccct cctccactct 5040

gaactaagca gatgccatct gcagaagtgc tggtagcata aggaggatcg ggtcataagc 5100

aatcccaaac taccaacaag aggaccttga tcttggcgaa agccctcggt gtggcagctt 5160

tagccctcct ccagatcaca tgtgtgcaaa ttatggcttc agaggtggaa gataaacagt 5220

gacgggggaa caaacagaca acaagaaggt ttggaagaaa tctggtttga gactctgaac 5280

cttagcacta aggagattga gtaaggacct ccaaagttcc ccggactcat gaattctggg 5340

cccttggccc attctgtgca cagccaagga cttcagtaga ccatctgggc agctttccca 5400

tggtgctgct ccaaccatca gataaatgac cctcccaagc accatgtcag tgtcgtacaa 5460

tctaccaacc aaccagtgct gaagagattt tagaaccttg taacatacaa tttttaagag 5520

cttatatggc agcttccttt ttaccttgtt ttcctttggg gcatgatgtt ttaacctttg 5580

ctttagaagc acaagctgta aatctaaaag gcactttttt ttagaggtat aaagaaaaac 5640

tagatgtaat aaataagatc atggaaggct ttatgtgaaa aaagttgaat gttatagt 5698

<210> 469

<211> 4196

<212> DNA

<213> Homo sapiens

<400> 469

aacacataga aggtgagcca cactaattat gaaaatccac agtgtgaaag gacagcgctg 60

ccctgaccat acgccaaaga gttcaaagcc ggcctccaga acatggtcca gaagagctgg 120

agggagcgtc aacatccggg ggactctgct aatactcggg cccagctcca caagctgcgg 180

```
gtccatcaca aaggacagcc gcactaggct aatatcgcag acctgggaac actgccactg   240

ccattcaggg gcgtatatgg acaagacaaa actggcttgg ctcttcgggc caggggtgcc   300

ttttccaagg atactcagag cattttgtgg gaacctttca ctcaaagtga aaaataattc   360

ctaaaacgtg cataaaaccc gccttgaaca atggctgctc ggttcctctc actcccccaa   420

atcatgtctc attttcctac aactgatatc ctccgtctag ccctttaact ttatctccgt   480

gttggctttc tgacagacca agaggctcag attgacagtg gtggtgccat ttgctggggg   540

ctgtaaacta gttcaaaaag cttccagtct gtgccaggat gccaccttat tgccaaggca   600

ggatttgcac tttacagaga aactggcatc ttaagtatgt atctgggtcc atacagtgat   660

tgctggtcta cagtattcgt ttttttgttg tttttttgtc tttttttttt ttgagacgga   720

gtctcgctct gttgcccagg ctggactgca gtggcgatct cggctcactg caagctccgc   780

ctcctgggtt cacgccattc tcctgcctca gcctcctgag tggctgggac tacaggcgcc   840

caccaccacg cccggctaat tttttgtatt tttagtagag acgtggtttc accgtgttag   900

ccaggatggt ctcgatctcc tgaccttgtg acacagtatt ctttaatcac agactaaata   960

gtaagtacta tggaagtttt gagaacagaa atgtactttc acatttttct aataaaaccc  1020

agatgagctg acagcatcag gccattttag gggagcacta tactcaaagt gcagacgctc  1080

ctggaggtga agcagtgatg ccatggcttt ctaagttatt ctagtctaag aagattccca  1140

acagacagaa agagggagga acaggattgg ttccaggtca ggccctcaat tcatcactca  1200

gtgttggctt ttctgctcac tctcctacca gtgccaaaat caagtttgtt taaattaaat  1260

cctaactcag catagacaga tttgagcact tccttcttaa caccaaatca tctcccactc  1320

tacaaatcta gaggttcctg taccaatgaa ctcagaaata agctcgacat aaagaattct  1380

taaggctggc tgagctgcac acatgacatc ctggaacatg gctacccaat taacaccaac  1440

ttaaatctat cttcacgcaa gagttacttt aaatttcagg tgagacagtc ttgggatgaa  1500

gaaagtgtag gaatggaaac cttccttccc agatggactg ggataacacc actgaactca  1560

ttctcactta tatattaggt caaactgatc tttgattccc aagggtgaga ttccaccgtg  1620

ttagtctgaa gaaggccaag gaaccacagt gatgagcagc tctggccctg aagtcagccc  1680

tgagctatct gccagtaccc ctcctcattg ggggataaca tcacgacatc aaaagcagaa  1740

gctgtggcca cggttgcatc gtcctggctg agggctagtg cctgtattct tgcatcgtgc  1800

tcaaaacgat gaacagggta ctttccggtc cttaaatccc aaatattaag aaaccctatg  1860

cagcaagaaa caatgcagca atggaacatt tggttgtaag aaacagacac ccactgaaac  1920
```

tggcttaaac ataaaaagga aactgactgg aaaggaatga ggctacttca tggagcccaa 1980

gggcaggaag tacagctgga ggtgataagg gatcagaacc aggaaccagg aagacatgca 2040

gaaccaagga aaaggatgca gacaaaagaa gaaactgggt ctcttgaaac atccagaaga 2100

caagtgagga ccactggccc aataaaggag aaggggcagg gcctggcact cccacctgct 2160

ccctgggctc aggaccctcc accttgacaa gcagcagcca ggctgaagga actctgagct 2220

cagcctagac cagtaacagc cattaacgat gacatgagta acgatggcca gtctttcgag 2280

gagacataaa gcctgctcag cagctgtgga tgggcaccca tgccagtttg cagcaggccc 2340

ctcccacctc cctaaggagg ccagccagag tgtggtaatg aaactgcaca tagtggaaat 2400

gggatctaaa tgagtttaaa ctgatttatg ttagcttttg taaagattac tcgatatctg 2460

gaaagtgcta ccactgtgaa ataatgtcga caatccttaa gacctctgtc taatggtact 2520

tgcacagaat atttatattc ttcgtcatgg gaacaaggac cataatggat accatttttg 2580

ttttattagg gatgcatatt taaattaatc tgctatttgc ctaaacaatt agctgcttct 2640

gtttgtgtgc acaaagccaa aattgcaatt aagcttccat caaaaagata agtcccaact 2700

aaaactgtcc cggtggagtc ataagagctc agggcagaac tttccaaaat tactttttag 2760

cataatggta attatgttaa ttgcctgaaa ggtaaataac tgctgaactg gttttggaaa 2820

aaaaacacaa ttggtatact cttccctccc ctttgatctt ttccatgcac cacaaaattt 2880

aaaacaggtt aacagtttcg aaaggtcata gactagtccc ttcttcaact acagagctgg 2940

tcttgtggtc tttagtggtt tcttgattag aaattatttc agccgcgagc tcccatcccc 3000

ttgagcttcc acaataaaca cctgaagctt ggtgtcaact tcatgatcgt taaatagaca 3060

ggatcaatta actgcgttca gagatactga atgaagttga ctatttataa taaagacagc 3120

tggcaatctc aatttctacc atgtaaataa acacttgcct atcagaaatt aatcaggagt 3180

caaaagaaat tctgcaacaa aggaaaaggc attttgacaa aaattttaaa tatacccata 3240

gcactgactt aacacgtacc tctttgttca ttaagtccac acatcaccac tctgaaatgc 3300

aggccagaga cataaaacta gcataaagtt ggacaggaca aaagtttttg ctcttcatgg 3360

aagaggtgcc ggtgggagat tagtatcagt gtagacaagg gtcataaaga acagctaaac 3420

cacggagggt cacgaaaaag gaaaaaggct gaagtttctt gttactgcag ctactgtggc 3480

atgccatcct gctttcccgc tgaccacagc gctacagctc tgttgcctaa ggcagaaaat 3540

aaacagaaaa cattctggaa tctgcatttt agattgacaa gtaaaagaat ctgaataggc 3600

ttatggagga ggcgactggt tagggcataa acaaagcagc gagatcacca aaatagaaac 3660

tgagtcaaga gaagaggaag taagattgaa tatatttagt agctctcaaa ttcaaagcag 3720

aaagaacacc tgaaaaagaa gaatgaaaaa tgacgagaca gcagactgaa aaggaggcaa 3780

atagtatatt gttaagacta tggcaatgtg actagataga agaatttcca gttaacatct 3840

taggaaaaac agattgatgg agaaggcaaa gaatttggac cagcttctac aagggaaagt 3900

tccagagggc aggtaacgtg aaagagacat cactgtgcat gcagcctcag actgaggcca 3960

gtgttctcta taaccgatat acacatgata tagactctat cccgaagaga tcagcagaca 4020

ctggtagtag cagatgcctc taaggagggg agtggggaat cagtggactg ggtggtagta 4080

gattaaaaaa aaaagatcac tactgaagct gagtgatggg tacacggggg tgcatcatgc 4140

tattcgttcc atttttgtgt attttgaatt tttcacaata aaagattttt aagaat 4196

<210> 470

<211> 3814

<212> DNA

<213> Homo sapiens

<400> 470

atgcccaaaa ctgaaccgaa gggagcagac cctgagtcgc ccaggagaga agagatgggc 60

tgcaatgctg accaagagag ccagagcggc cctggagtac cacaaaccca gggtggtgag 120

gtcaagccaa agtcgccaga gacagccctg gaggctttta aagccctatt catccggccc 180

cccagaaagg ggaccacagc tgacacctct gagctggaag ctctcaagcg caagatgaga 240

catgagaagg agtcgctaag agctgtgttt gaacggtcca attctaagcc agcggatggc 300

ccctctgatt ccaaaagtcc tgaccacagc ccgactgagc aggatgacag gactcctggc 360

agacttcaag ctgtctggcc acccccaaag acaaaagaca cagaagaaaa agtgggactg 420

aagtacactg aagcagaata ccaagctgct attttacact tgaagaggga gcacaaagaa 480

gaaattgaaa acctgcaggc acagtttgaa cttcgggcat ttcatatccg gggcgagcat 540

gcaatgataa cagcgagact agaagaaacc attgaaaatc tgaaacacga gctagaacac 600

agatggcgag ggggttgtga agagaggaaa gatgtgtgca tttccaccga tgatgactgc 660

cctccaaaga ccttcagaaa tgtgtgcgtc cagacagaca gagagacctt cctcaagccc 720

tgtgaaagtg aaagcaagac aaccagaagt aatcaattag tacccaaaaa gctgaatatc 780

tcctctttaa gccagctctc acccccaaat gaccacaaag acatccatgc agcactccag 840

ccaatggagg gcatggcatc aaatcagcag aaggcattgc ctccgcctcc cgcatccatc 900

cctcccctc cgcccctccc ctcaggactt ggatctttgt ctcctgcacc tccaatgcca 960

cctgtgagtg ctgggccacc gctaccacct ccgcctcctc caccgccacc tctacctcca 1020

ccttcaagtg ctggacctcc accacccca cccccaccc cacttcctaa ctccctgcc 1080

ccacccaacc ctggagggcc tcctcctgct ccaccacccc caggacttgc accccacct 1140

cccctggac tcttctttgg acttggctct tcttccagtc aatgtcctcg aaaaccagcc 1200

atcgagccca gttgtcccat gaagccttta tattggacta ggatacaaat aagtgatagg 1260

agccaaaatg ctacaccaac cttatgggac tccttagaag aacctgacat tcgggacccc 1320

agtgaatttg agtatttatt ctccaaagac acaactcaac agaagaaaaa acctctgtca 1380

gagacttatg agaagaaaaa caaggtcaaa aagatcatca aattgttgga tggaaaacga 1440

tctcaaactg tgggaatctt gatatctagt ttacatttag aaatgaagga tatccaacag 1500

gccattttca atgtggatga ctccgtggtt gatctggaga ccctggcagc cttatatgaa 1560

aacagagccc aagaggatga gctggttaaa ataagaaagt attacgagac atccaaagaa 1620

gaagaactga agctgctgga taaacctgag caattttac atgagttagc ccagattcct 1680

aattttgctg aacgtgccca gtgcataatc ttcagatctg tcttttctga gggtatcacc 1740

tccttgcaca gaaaggtaga gatcatcacg cgagcttcta aggacttgct gcacgtgaag 1800

agcgtgaagg atattttagc tctcatcttg gctttggaa attatatgaa tggaggaaat 1860

aggactcggg gacaagccga tggatatagc ttagaaattc tgcccaaact caaggatgtc 1920

aaaagtcggg ataatgggat taatctggtg gactacgttg ttaagtatta cctgcgttac 1980

tatgatcagg aagctggaac agaaaagagt gttttcccct tgccggaacc acaggatttc 2040

tttctggcct cccaagtcaa gtttgaagac ctcataaaag atttgagaaa actgaagagg 2100

caactagaag caagtgagaa acagatggtg gtggtgtgca aggagtcccc aaaggagtat 2160

ctccagcctt tcaaggacaa actagaggag ttcttccaaa aagccaaaaa agagcataag 2220

atggaagaaa gtcacttgga gaatgcacag aaaagttttg aaacaacagt acgatatttt 2280

gggatgaagc caaagtctgg tgagaaggag atcacaccca gctacgtgtt tatggtgtgg 2340

tatgagttct gcagtgactt caagacaatt tggaaacggg agagtaaaaa catatctaaa 2400

gaaagattga aaatggctca ggaatcagtc agcaagttga cttcagagaa gaaagtggag 2460

```
acaaagaaaa tcaatcccac tgctagcctg aaagaaagac tgcgtcagaa ggaagccagt 2520

gtgaccacta actaagatga agacacatgg aaatgatggc actggaggtg gaggaccttg 2580

cacgcatact ctttgtgacc acagggttgc aggacgttct tgaaagatgt gtcactaaat 2640

gtttgttttt gctcatctct ttctgaggtc atctgcagag agtgccccat gccttcttta 2700

agaagtccct cattaagccg caggaacaat ggaaaactat ttaagggaac attgcagaaa 2760

tatttgatga ctgtttcttg tggaagccca aagtcctctc taagagcaga agaaatacca 2820

aaatgtttcc aaaatttttt taaaagctga gattccagc tttataacca aagcttgata 2880

tatgtcacat tgtcacagaa gagagaaaag atcattgagg acagttgcct tgggagagtt 2940

caagtctttg tcgttacaca ctgctgtttt gattattggt cttagttttg atcctgttgc 3000

agcaaaatcc tgcagcatct ttctctccaa taatgttgca actcaccaaa actattcttg 3060

aagaggtcca agaacatgta ttatccagac taaaaaaaat gattttttgt tgttatggtt 3120

tacgtgatga aaaggagaaa aaacagaatc atacctgggt ggagagaggg agacaaatag 3180

ccataaactt catcctggag aacaagttac catgcaagga gttgacatca gttgttaagt 3240

gaggcccatt cttgttttta catcggtcct ttgtggtttt tctgggccag cagagattct 3300

gcaccccaac attgttggca gtgagcatta cgatgttgcc cgtggggtgc aaaagatcct 3360

gcaggactac aaatccctcc aggatatcat tgccatcctg ggtatggatg aactttctga 3420

ggaagacaag ttgaccgtgt cccgtgcacg gaaaatacag cgtttcttgt ctcagccatt 3480

ccaggttgct gaggtcttca caggtcatat ggggaagctg gtacccctga aggagaccat 3540

caaaggattc cagcagattt tggcaggtga atatgaccat ctcccagaac aggccttcta 3600

tatggtggga cccattgaag aagctgtggc aaaagctgat aagctggctg aagagcattc 3660

atcgtgaggg gtctttgtcc tctgtactgt ctctctcctt gcccctaacc caaaaagctt 3720

catttttctg tgtaggctgc acaagagcct tgattgaaga tatattcttt ctgaacagta 3780

tttaaggttt ccaataaaat gtacacccct caac 3814
```

<210> 471

<211> 4607

<212> DNA

<213> Homo sapiens

<400> 471

aagagctgca gctcctcctg tgcggaggga ttgagctctc tttgctctga tgagccatct　　60

tcagaaatta tgacttcttc ctttctttca tcttctgaaa tacataacac tggccttaca　　120

atactacatg gagaaaaaag ccatgtgtta gggagccagc ctattttagc caaagaagga　　180

aaagaccact tggatcttct agatatgaaa aagatggaaa agcctcaggg gaccagcaac　　240

aacgtatcag actcttcagt ttctcttgca gcaggagttc attgtgaccg tccttctatt　　300

ccagccagtt tcccagagca tcctgctttt ctctcaaaga aaattggtca agtggaagag　　360

caaatagata aagagaccaa gaacccaaat ggggtatcaa gtagggaggc taaaactgca　　420

ttggatgctg atgacagatt cactttgctg acagcccaga aaccacctac tgagtactct　　480

aaggtagaag gcatttatac atattctttg tctccatcca aagtttcagg agatgatgtt　　540

attgaaaagg attcccctga atcaccattt gaagtaatta ttgacaaagc agcatttgac　　600

aaagaattta agactcata taaggagagc acagatgatt ttggtagctg gtctgtgcac　　660

actgataaag aatcatccga agacatttca gagactaatg acaagctttt tccactgaga　　720

aataaagagg caggacgtta cccaatgtct gcattgctca gtaggcagtt ttcacacaca　　780

aatgcagcac tggaagaggt gtccagatgc gtgaatgata tgcataactt tactaacgaa　　840

atactgactt aggatctggt tccccaagtg aaacaacaga ccgataaatc ttctgactgc　　900

atcacaaaaa ctacaggact tgacatgagt gaatataatt cagaaattcc agttgtaaat　　960

cttaaaacta gcactcatca gaaaactcct gtatgttcta ttgatgggag cactcccatc　　1020

actaaatcaa caggtgattg ggcagaagca tctctccagc aagaaaatgc tattactgga　　1080

aaacctgtac ctgactcttt gaattccaca aaagaattca gtatcaaagg tgtgcaaggc　　1140

aatatgcaga aacaggatga cacacttgca gaattacctg gatctccacc tgagaaatgt　　1200

gactctttgg gttctggagt ggccacagtg aaagtggttt acctgatga ccacctgaaa　　1260

gatgaaatgg actggcagag ctctgcattg ggagaaatca cagaagctga tagttctggt　　1320

gagtctgatg acacagtaat agaggacatc acagcagata catcatttga aaataacaaa　　1380

attcaggctg aaaaacctgt ttccattcca agtgctgttg taaaaacagg tgaaagagaa　　1440

atcaaagaga ttcccagttg tgagagagaa gaaaaaacat ctaaaaactt tgaagaattg　　1500

gtcagtgact ctgagctgca tcaagatcag cctgatattc ttggaaggag tccagctagt　　1560

gaggcagcat gttcaaaagt acccgatacg aatgtctcct tagaagatgt gagtgaagtt　　1620

```
gctcctgaaa agcctattac tactgagaac cccaaacttc cttcaacagt gtctccaaat   1680

gtttttaatg agacagaatt ctcattaaat gtgacaacat ctgcctattt ggagtcatta   1740

catgggaaaa atgttaaaca tatagatgat tcctccccag aggacctgat agcagccttt   1800

acagaaacca gagataaagg aatagtagat agtgaaagaa atgcttttaa agcaatatca   1860

gagaagatga cagactttaa aacaactcct cctgtagaag tcttacatga aaatgagtcc   1920

ggtggttctg aaattaaaga cattggaagc aaatacagtg aacaaagcaa agaaacaaat   1980

ggaagtgagc ctctaggtgt tttccctacc caaggtactc cagtagcatc tcttgactta   2040

gaacaagaac agctcacaat taaggctctt aaagaattag gtgaaagaca ggttgagaag   2100

tcaacttctg cacagcgtga cgcagaattg ccttctgaag aagtactgaa gcaaactttc   2160

acatttgctc cagaatcttg gccacagaga tcatatgaca tcctagaacg taatgtcaag   2220

aatggatctg atcttgggat ttcccagaag cccatcacta tcagagaaac tactagggta   2280

gatgctgttt ccagccttag caagactgaa ttggtaaaaa agcatgtcct agcaagactt   2340

ctgacagact tctcagtgca cgatctgatt ttctggagag atgtgaagaa gactgggttt   2400

gtctttggca ccacgctgat catgctgctt tccctggcag ctttcagtgt catcagtgtg   2460

gtttcttacc tcatcctggc tcttctctct gtcaccatca gcttcaggat ctacaagtcc   2520

gtcatccaag ctgtacagaa gtcagaagaa ggccatccat tcaaagccta cctggacgta   2580

gacattactc tgtcctcaga agctttccat aattacatga atgctgccat ggtgcacatc   2640

aacagggccc tgaaactcat tattcgtctc tttctggtag aagatctggt tgactccttg   2700

aagctggctg tcttcatgtg gctgatgacc tatgttggtg ctgtttttaa cggaatcacc   2760

cttctaattc ttgctgaact gctcattttc agtgtcccga ttgtctatga gaagtacaag   2820

acccagattg atcactatgt tggcatcgcc cgagatcaga ccaagtcaat tgttgaaaag   2880

atccaagcaa aactccctgg aatcgccaaa aaaaaggcag aataagtaca tggaaaccag   2940

aaatgcaaca gttactaaaa caccatttaa tagttataac gtcgttactt gtactatgaa   3000

ggaaaatact cagtgtcagc ttgagcctgc attccaagct tttttttaa tttggtgttt   3060

tctcccatcc tttcccttta accctcagta tcaagcacaa aaattgatgg actgataaaa   3120

gaactatctt agaactcaga agaagaaaga atcaaattca taggataagt caataccttta   3180

atggtggtag agcctttacc tgtagcttga aaggggaaag attggaggta agagagaaaa   3240

tgaaagaaca cctctgggtc cttctgtcca gttttcagca ctagtcttac tcagctatcc   3300

attatagttt tgcccttaag aagtcatgat taacttatga aaaaattatt tggggacagg   3360
```

```
agtgtgatac cttccttggt ttttttttgca gccctcaaat cctatcttcc tgccccacaa  3420

tgtgagcagc tacccctgat actccttttc tttaatgatt taactatcaa cttgataaat  3480

aacttatagg tgatagtgat aattcctgat tccaagaatg ccatctgata aaaaagaata  3540

gaaatggaaa gtgggactga gagggagtca gcaggcatgc tgcggtggcg gtcactccct  3600

ctgccactat ccccagggaa ggaaaggctc cgccatttgg gaaagtggtt tctacgtcac  3660

tggacaccgg ttctgagcat tagtttgaga actcgttccc gaatgtgctt tcctccctct  3720

cccctgccca cctcaagttt aataaataag gttgtacttt tcttactata aaataaatgt  3780

ctgtaactgc tgtgcactgc tgtaaacttg ttagagaaaa aaataacctg catgtgggct  3840

cctcagttat tgagttttttg tgatcctatc tcagtctggg ggggaacatt ctcaagaggt  3900

gaaatacaga aagcctttt ttcttgatct tttcccgaga ttcaaatctc caattcccat  3960

ttgggggcaa gttttttttct tcaccttcaa tatgagaatt cagcgaactt gaaagaaaaa  4020

tcatctgtga gttccttcag gttctcactc atagtcatga tccttcagag ggaatatgca  4080

ctggcgagtt taaagtaagg gctatgatat ttgatggtcc caaagtacgg cagctgcaaa  4140

aagtagtgga aggaaattgt ctacgtgtct tggaaaaatt agttaggaat ttggatgggt  4200

aaaaggtacc cttgccttac tccatcttat tttcttagcc cccttttgagt gttttaactg  4260

gtttcatgtc ctagtaggaa gtgcattctc catcctcatc ctctgccctc ccaggaagtc  4320

agtgattgtc tttttgggct tcccctccaa aggaccttct gcagtggaag tgccacatcc  4380

agttcttttc ttttgttgct gctgtgttta gataattgaa gagatctttg tgccacacag  4440

gatttttttt tttttttaag aaaaacctat agatgaaaaa ttactaatga aactgtgtgt  4500

acgtgtctgt gcgtgcaaca taaaaataca gtagcaccta aggagcttga atcttggttc  4560

ctgtaaaatt tcaaattgat gtggtattaa taaaaaaaaa aaaccccc             4607
```

<210> 472

<211> 3442

<212> DNA

<213> Homo sapiens

<400> 472

```
atgaccgcac taggaagagg ccggtaagaa ctcgctggcg gcaaggctac gaactaccta    60

aaaggacgta tggagcaggg cctgggcggg gttaggaggg gatcctgtga cgtctcgttc   120

cctcccccgg ctcacgtggg tgccacccac ctgcccggcc cacaggctac ggagaaggct   180

tcgacgacgt catcatccag ggggatctgg aggagctgaa gtttgtggct ttttacacta   240

aaggcgacga ggtgatcgcc gtggccagca tgaactacga tcccattgtg tccaaggtcg   300

ctgaggtgct ggcctcaggc cgtgccatcc ggaagcggga ggtggagcgc agcaagcaca   360

cagtggtggc ctataaagat gccatttatg tatttggtgg agacaatggg aagaccatgc   420

tcaatgacct cctgcggttc gatgtgaaag actgctcctg gtgcagggcc tttaccactg   480

ggacccacc ggcccccgt taccaccact cggccgtcgt ctatgggagc agcatgtttg   540

tctttgggg ttacactggg gacatttatt ccaattctaa cttgaagaat aaaaacgacc   600

tctttgaata caagtttgca actggccagt ggacggagtg gaaaattgaa ggacggttgc   660

cagtcgctag gtcagcccat ggggccacgg tgtacagtga caagctgtgg atctttgctg   720

gctatgacgg caacgccagg ttgaatgaca tgtggacaat tggcctccag gaccgagagc   780

tcgcctgctg ggaggaggtg gcccagagtg gcgagatccc cccatcttgc tgcaacttcc   840

ccgtggctgt gtgccgggac aagatgtttg tattctctgg gcaaagcgga gccaaaataa   900

ccaacaacct cttccagttt gaattcaagg acaagacgtg gacacgcatc ccaactgaac   960

acctgctccg gggctcccca ccacccccgc agcggcgcta cgggcatacc atggtggcct  1020

ttgaccgcca cctctatgtg tttggggggtg cggccgacag cacgctgccc aacgagctgc  1080

actgctatga cgtggacttc cagacctggg aggtcgtcca gcccagctcc gacagcgagg  1140

ttggtggggc tgaagtgccc gagcgagcct gtgcttccga ggaggtgccc accctgacct  1200

atgaggagcg ggttggcttc aagaagtccc gagatgtgtt tggcctggac tttggcacca  1260

cctcagccaa gcagcccacc cagcctgcct cggagctgcc cagtgggagg ctcttccacg  1320

cggctgctgt catctcggac gccatgtaca tcttcggggg cacggtggac aacaacatcc  1380

gcagcgggga gatgtacagg ttccagttct cctgttaccc taaatgcacg cagcacgagg  1440

actacgggcg gctgtgggag agccgccagt tctgcgacgt ggagttcgtg ctgggtgaga  1500

aggaggagtg cgtgcagggc cacgtagcca ttgtcacagc gcggagccgc tggcttcgca  1560

ggaagatcac gcaggcgcgg gagaggctgg cccagaagct ggagcaggag gccgccccag  1620

ttcccaggga ggccccggc gtggctgctg gtggggcccg gccgcccctg ctgcacgtgg  1680

ccatccggga ggccgaggcc cggcccttcg aggtgctcat gcagttcctc tacaccgaca  1740
```

agatcaaata cccacggaaa ggccatgtgg aggatgtgct gctcatcatg gatgtgtaca 1800

aactggcact gagcttccag ttgtgccgcc tggagcagct gtgccgccag tacatcgagg 1860

cctccgtgga cctgcagaac gtgctggttg tgtgcgagag tgccgcccgg ctgcagctga 1920

gccaactcaa ggagcactgc ctgaacttcg tggtaaagga gtcccacttc aaccaggtga 1980

tcatgatgaa ggagttcgag cgcctctcct ctccactgat agtggagatt gtgcggcgga 2040

agcagcagcc gccccctcgc actcccttgg accagccagt ggacattggc acatccctga 2100

tccaggacat gaaggcatac ctggagggag cgggcgcgga attctgtgac atcactctgt 2160

tgcttgacgg gcacccacgg ccagcccaca aggctatcct ggccgcccgc tccagctact 2220

ttgaagccat gttccggtcc ttcatgcccg aagatgggca ggtgaacatc tccatcgggg 2280

agatggtgcc cagcaggcag gccttcgagt ccatgctgcg ctacatctac tacggcgagg 2340

tcaacatgcc gcccgaggac tcgctctact tgtttgcggc cccctactac tacggcttct 2400

acaacaaccg gctgcaggcg tactgcaagc agaacctgga gatgaacgtg acggtgcaga 2460

acgtgctgca gatcctggag gcagctgaca aaacgcaggc actggacatg aagcggcact 2520

gcctgcacat cattgtgcac cagttcacca aggtctccaa gttgcccacc ctgcggtcgc 2580

tgagccagca gctgctgctg gacatcatag actccctggc ctcccacatc tcagacaagc 2640

agtgcgcaga gctgggcgcc gacatctgag gccctgtggc gcctgcccat tgtgaagaat 2700

cgccgtgcct gcctgccctg cctactgaga agactaccgg ctatgcgcat gcctatggca 2760

gtgggtgcac ctgccaggcc aagggtcagg gtgcccagag cctccaaaga gagctgaggg 2820

gatgtggggc cccaaactca ttaattcact gaagacacag gtcccacagg gagcggatga 2880

tgaagcagac cccctcctgt catcaccctc tcctggtgta gtgtggatgc gaggccacgg 2940

ctcagtgatg ggctcaccac ccagaagtgg ggagagactt tgggcctccc acccagtggg 3000

gcttggcctg gcttctgtgg cctgggcgtg ttgtggactc aggcactggg gcctgtcacc 3060

aaggctcctc caacatgcgg gaggaggctt agcagacttg cgctgcacca gcgaatctgc 3120

ctgggctgct cctgtcccac ccaccctcac tgagatccat gtaaggggct cctcttccca 3180

cctggaactt gtgagtgggg acccatgatg tatgggtctc acctgacttg aggtgaattt 3240

tggagtgaag ggccctgagg tcagctccca ggtcggtcgt gctgggccag gcctggtttt 3300

cacaggggct gaaggatccc agtccacctg tgtgcatgtc agggctcggc cgggaagaag 3360

ccagcaaagt cccccgtgtc ccttgctgag tattctgtca cagacaagcc tccattaaag 3420

ccacagcagt gctacccacc ac 3442

<210> 473

<211> 4973

<212> DNA

<213> Homo sapiens

<400> 473

accttcacca agcatgtttg gtgagctgct gcagaatgcc agcaccatgg gggatctgcg　60

gaactgtcca agcaactgtg gagagaggat caggattcgc cgtgtgttga tgaatgctcc　120

acagattatc acgattgggc tggtatggga ctcagaccac tcagacttag cagaagatgt　180

tatccacagc ctgggaacct gccttaagct gggtgatctg tttttcagag tgacggatga　240

ccgggccaag caatctgaac tgtacttagt tggaatgatc tgttactatg caaacatta　300

ttctacattc ttttttcaaa caaagattcg caaatggatg tattttgatg atgctcatgt　360

caaggagatt gggcccaaat ggaaggatgt ggtgaccaaa tgcatcaagg ggcattatca　420

gcccctgctg ctgctttatg cagatcccca gggtacccca gtttccaccc aggacctgcc　480

tccccaagct gagttccagt catacagcag gacatgctac gacagtgaag attcagggag　540

ggagccctcc atctcaagtg acactcgaac agattcctca acggagagct atccctacaa　600

acattcccac catgagtctg tggtcagtca cttctcttct gattctcagg ggacagtcat　660

ctataatgtg gaaaatgatt ccatgtctca gagcagtcgg gacacaggac acctgactga　720

tagtgaatgt aatcagaaac acacatccaa gaaagggtca ctgatagagc gcaagaggag　780

ctctggtcgg gttaggagga aaggcgatga gccccaggcc tcgggatacc acagtgaagg　840

agaaacactg aaagagaagc aggctcctag aaatgcctcc aaaccatcca gcagcaccaa　900

caggctgaga gattttaaag agacagtcag caatatgatc cataacagac catccctggc　960

ttctcagacc aatgtaggct ctcactgcag gggcagagga ggagaccagc ctgacaaaaa　1020

acctcctagg accctgcctt tacactctcg tgactgggaa atagagagta ccagcagtga　1080

gtcaaaatcc agttcttcca gcaagtatcg tcccacatgg agacccaaac gagaatctct　1140

gaatattgac agtatcttta gtaaggacaa aaggaagcac tgtggctata cccagcttag　1200

ccccttttct gaggattcag ctaaagaatt tataccagat gaaccaagca atccaccttc　1260

```
ttacgacatt aaatttggtg gaccaagccc ccagtacaag cgctggggcc cagcacggcc   1320

aggctctcac cttttagagc agcacccccg actaatccag cgaatggaat ctggctatga   1380

aagcagtgag aggaacagca gcagccctgt cagcctggat gcagccctgc ctgagagctc   1440

aaatgtctac agggatccaa gtgctaagag atcagctggg ttggttcctt cctggcgtca   1500

tatcccaaag tcgcacagca gtagcatcct ggaggtagac tccacagcat ccatgggtgg   1560

ctggacaaag agtcagcctt tctctggtga ggagatatct tctaaaagtg aactggatga   1620

attgcaggaa gaggtggcca ggagggcgca ggaacaggaa cttcgaagaa aacgggagaa   1680

ggagttagag gcagcgaaag ggtttaaccc tcatcctagc cgcttcatgg acttggatga   1740

actgcagaat caggggagga gtgacggctt tgagaggtcc ctgcaagagg cagagtcagt   1800

gtttgaagag tcactacatc tggaacagaa aggagactgt gctgcagctt tggctctctg   1860

taatgaagct atcttgaaca gcctatcccg ctccaagtat tgttaagcca agaggcccaa   1920

ctggaatccg gcatggatac agagtttggg gccagttctt tcttccattc acctgcttcc   1980

tgccatgagt cacactcatc actatctcca gagtcatctg ccccacagca cagctccccc   2040

agtagatctg ccttgaagct tctgacttcg gttgaagtag acaacattga accctctgca   2100

ttccacaggc aaggtttacc taaagcacca gggtggactg agaagaattc tcatcatagt   2160

tgggagccat ggatgcccc agagggtaag ctgcaaggct ctaggtgtga caacagcagt   2220

tgcagcaagc tccctccaca agaaggaaga ggcattgctc aagaacagct gttccaagaa   2280

aagaaggatc ctgctaaccc ctccccggtg atgcctggaa tagccacctc tgagaggggt   2340

gatgaacaca gcctaggctg tagtccttca aattcatcag ctcagcccag ccttcccctg   2400

tatagaacct gccaccccat aatgcctgtt gcttcttcat ttgtgcttca ctgtcctgat   2460

cctgtgcaga aaactaacca atgcctccaa ggccaaagcc tcaaaacttc attgacttta   2520

aaagtggaca gaggcagtga ggagacctat aggccagagt ttcccagcac aaaggggctt   2580

gtccgttctc tggctgagca gttccagagg atgcagggtg tctccatgag ggatagtaca   2640

ggtttcaagg atagaagttt gtcaggtagt ctaaggaaga actcttcccc ttctgattct   2700

aagcctcctt tctcacaggg tcaagagaaa ggccactggc catgggcaaa gcaacaatcc   2760

tctctggagg gtggggatag accactttcc tgggaagagt ccactgaaca ttcttctctt   2820

gccttaaact ctgggctgcc taatggtgaa acttctagcg gaggacagcc caggttggca   2880

gagccagaca tataccaaga gaagctgtcc caagtgagag atgttaggtc taaggatctg   2940

ggcagcagta ctgacttggg gacttccttg cctttggatt cctgggtgaa tatcacaagg   3000
```

ttctgtgatt ctcagcttaa gcatggggca cctaggccag gaatgaagtc ctcccctcat 3060

gattcccata cgtgtgtaac ctatccagag agaaatcaca tccttttgca tccacattgg 3120

aaccaagaca cagagcagga gacctcagaa ttggagtctc tgtatcaggc cagtcttcag 3180

gcttctcaag ctggctgttc tggatggggg cagcaggata ccgcctggca cccacttagc 3240

caaacaggct ctgcagatgg catggggagg aggttgcact cagcccatga tcctggtctc 3300

tcaaagactt caacagcaga aatggagcat ggtctccatg aagccagaac agtgcgtact 3360

tctcaggatt catcaaacgt gaggaagcct ttggaaaccg ggcaccgttg ttccagctcc 3420

tcttccctcc ctgtcatcca tgacccttct gtgtttctcc tcggtcccca actctacctt 3480

ccccaaccac agttcctgtc cccagatgtc ctgatgccca ccatggcagg ggagcccaat 3540

agactcccag gaacttcaag gagtgtccag cagtttctgg ctatgtgtga caggggtgaa 3600

acttcccaag gggccaagta cacaggaagg actttgaact accagagcct cccccatcgc 3660

tccagaacag acaactcctg ggcaccctgg tcagagacca accagcatat tgggaccaga 3720

ttcctgacta ctccagggtg caatcctcaa ctaacctaca ctgccacact accagaaaga 3780

agcaagggcc ttcaggttcc tcacactcag tcctggagtg atcttttcca ttcaccctcc 3840

caccctccca ttgttcatcc tgtgtaccca ccatctagca gtcttcatgt acccctgagg 3900

tcagcttgga attcagatcc tgttccaggg tcccgaaccc ctggtcctcg aagagtagat 3960

atgcccccag atgatgactg gaggcaaagc agttatgcct cccactctgg acacaggaga 4020

acagtgggag aggggtttct gtttgttcta tcagatgctc tcttttccca ctgtagaaac 4080

tgattccaga gaaattctcc aagtgcggtg ctatgtgggc ttgcgggaga ggtgttatga 4140

tcaaacagaa ccatcctctt taccctctgt tcatggtttt tcttggctct gtggtccagt 4200

gagttgtcac agcttcactc ccaatttctg ggatattcag ggcaataatc ttgccactgg 4260

gtatttgcta gttgaaatta tgtggtaggg agagaagcca gtaagcttca cttctccgtt 4320

tggctgatgt cactctcgaa ttctgtactt tcatacggat tgtaataggg agggtctaaa 4380

aggaagcttc agttttggat ttttagagct tcttctaagt acaattgttg aatcaagagg 4440

taaaaatggt atgttataac tggaaatacg ctgagattaa aaaggagata aattagcccc 4500

attgggacag tgctattggg aatgtgaatt gataccactt tcctggagtc tagtttagta 4560

tttattttat atgtaatgcc tgaaaagatg tgtgtctcct ttgactcaat acttatagga 4620

atttacacaa aggttataat caaagattat agaactgtta tactggaaaa acacgaaata 4680

ttctaattat gaattaattg gggattggtt aaataaacta tggtttgata tgctctaaaa 4740

ataatgttac agaaaaaagt gtactgatat ggcaaaatgt atgacttata gttaaaaaag   4800

caggttagat gttgatagat acagtatgat agaaaaagat caggaaggta tatgctgaca   4860

tttaaatctg gatatttatg agtgtttttt ttatttcaat ctttgtacat gcatgtattt   4920

tctagaaatt gtattactat ctttgtaata aagtaaatta tttttaaggg act   4973

<210> 474

<211> 3822

<212> DNA

<213> Homo sapiens

<400> 474

atagaaccta ctggggaggg acagagaccc agagacccag agggagacac tgacacagag   60

agagtgatag agagagagag gcaaagtcac agagacagaa agaggagggg agagggatgg   120

agagagacaa agtcacagag atagatggag ggggaagaag ggaggaggca gagagagaga   180

ggagaaaaac agagagacgg ttgacagatt aggagaggtg cttctggtgc tgctggttgt   240

gctaggaaaa gacatgtttc tctttggaca gatgtgctgc cagtgctgga agtaggctga   300

ctgtgtctct ctccctgctc tgagcctggc accagatttg gcaaaaccag acagagcaaa   360

agctgcttcc agcccacagc acccaaggct ggtctcctct ttcatcgcag ggctgctatg   420

tacagttgca caggctgtgc cctgcaccaa gcacccagaa gaggatacaa gagcctgcct   480

gtgctccttg aagtatccct gagccctgat gaacacctgt gtctacgtgg agagagggga   540

gcctctgctc acatgagcaa aggcaacagg gggggactgc agaggcctgt tccctcccac   600

agtctctatt ttgcaataag gacatcaact gggagtggcc cagaagcccg aagctgagag   660

gacaaagctc actgggccca ctcaacatga agatgacaag gatgaagacc tttatgatga   720

tccattccca cttactgaat agatgaagct tcttggtgat gtaacagtct gtggaaactc   780

ccacaggaca aatgcagaaa ggaaggacct agatcactgg atggtcaacg ttgccccttg   840

cacagcagca aaggcctata caaatttttt gagtagcttt atctagtggt tcagctactg   900

ggaataactt gtaaaatccc ctggatagtc aacagcattg gggcttgctt tgtaaacaga   960

gacctgacct acttaattct tcccagaggt tggaaaaaga ggctggactc acacagacat   1020

gaaaccttgg cttaattgga cactaattac tcataagaga tctgtttacc cgaacttccc 1080

ctagaccaag ctcagtataa aatgagagga tgcataaaga agcaagatat ttagaggaaa 1140

atgtcacaaa tacatttatc agtcccaaaa gtcctttttt ttccccagaa gtgatgttgc 1200

taattgcaca aaaataaaca atacaggggt tgataaattc cacatttaag ggctgaggat 1260

agtgtcccta catttctaag aagctgtata tttggaaatg aatacaattg aaagtaagga 1320

taagtggcat tctaaagcca attggataac ttgaatgaac aagcagaatt taccatattt 1380

tgatatgttt ctttttgatt aaagtatctg taaaggaaac aaattatagt attgctatag 1440

attttattac tgaacaagaa aaaaaggctt gatgttgtgc atttcctttt ggcctttggt 1500

cttggctgat attgggcatc caatgagctt ctttgtcttg aatgaagact taagagggag 1560

tgaaaagtag gaagagcatc aaaacttctt tgcaggatgt aatcaaacca cctactactt 1620

attgtcttac gatccattta ttcaacaaat ggaacatctc aattgcttga tgctattaca 1680

gacactaggt atagtcttag aaaaacaaat tgctgttttt atatagcttg tgttatggtt 1740

gatgtagtac agtcaaaatt atttaaataa aggaagatgt gaggaagact ttgaacttag 1800

aaatctgggt tctcatccaa gctttgctgc tagcttgttg ggggaacctt gggtgatgag 1860

ttggttgact ccttccagat ctcagcgttc atccatcaag tgagtgaact tgaccagata 1920

ttcaataatg gcccttccag ccccatctct atatgaaagg gaaaccacag tatgggccca 1980

tggggaagat catggacttt ggagtaaaac atttctggct tggtcaatta tttaatctct 2040

tgatcccgat caattcatgt aactactctg accctcagtt tccttgctgc aaaatgagat 2100

actaatattt gctcaaataa gataacaggc aaaacaatca tgagggctcc tggcacacca 2160

ctgtgcatgg cttttgctcc cttggggagc ttataaatga aaaaaagatt ttacaatgca 2220

aagacagtaa gcattttgtt agtgaagcaa caaaataatt gggcaatttc ctctcaattg 2280

caccatcaac tgatgcccaa cctagaaagc atttggctaa gaatggaaaa ggaatctttg 2340

cccagatccc tcaattttga ccatcatggc atatacatga attggcagac taaatttatg 2400

ctccttttga aaactgtgtc cattccaaga agtcaggcta ttttcaccca gcctggtcta 2460

ggcagtggga ctccccaagg ctacaagcag agccacagtg ctctgggctg ggctgccaca 2520

ctgtcatgct ggggcaaaga tggcagcaga cagctctctt gggtaacagc aggaagctct 2580

tttcacaaga gtgatctcat ctcttagggg actatggtag aaacacaggg caaaagctat 2640

aggaatggtc caacataata actgtttttt tttttaattt tcaaaacatg ataaatgatt 2700

aagaatataa aactggaatt tagaacttac agagaacttg tatgaataaa ttaaaaagac 2760

出証特２００４－３０５９６６１

aacctaattt taaaatgggc agaagtcttg ggcaggcaca ttacaatata gcaggggtca 2820

ccaaattaaa gcctcaccag caaaatccac ctcccatccc agcctgtttt tataaataag 2880

ctgtgttgga acacagccaa tcccattcat tcacacattg cccatggctg cttttgcttg 2940

acaacagcat agttgagtag tagggacaag accatatgac ctccaaagcc agagatatta 3000

actgtcaggc cctttataga gtgattcacg gagacccca taatagagga aaatacaagt 3060

ggccaatagc acataagaag atgcccagta ttacagccaa gaggaaaatg caaattacac 3120

ccacagtaag ataccattat gcatccatta gaaaggctaa aattaaaagg actgacaaca 3180

acaagtgttg acaatggtgg gtaacagcaa gagctctcat acactgatgg ttgaagtgta 3240

aattggttca gttttggaaa agagtttgga ggtgtctact acagttaaac atacatattt 3300

ccatgcccca gaaactcctg ggcatattct caaaagaaac gagggctgtg ccaccaaga 3360

gacatgtgtg agaaaggtcc tagcaccttt atatatcata gtcccaaaca gaaaacaaca 3420

catacccatc cacgttagga tgaactaaat aaattggggc atatgcattc aatggaatag 3480

tacatagcaa tgaaaaaata aactgttgcc ccatgcaaag atgttttaca gacataacgt 3540

taagcagaag aaagcagatc tcaaggagcc cacattgtac aattccgatc tatatgaagc 3600

tcaataacac atggtactag aagttgtaat agcagttacc tgtaggactg gaggtttgta 3660

ttgaaagaga aggaacatca ggaagtctgc tggagcctgg aaatgtctga gatgttgctc 3720

tgggaggcag ttgcatggct gtagacatat gtaagacatt attggatggt atacctgaga 3780

ttggagcacc tacaatagaa ggtacagtgt tacatctcag tg 3822

<210> 475

<211> 4392

<212> DNA

<213> Homo sapiens

<400> 475

atagcccccc tttgtatgca agatcaaaca caagtttcca acaaaccccc acatcttgag 60

cttgaagccc aaacctacgg aatcgaaatc taaagcttgg acttctaaat gtgataatgc 120

ctcattcctg ggaataaaga aggtgagaag agagaggagg gatcattaaa atttttttt 180

ttcatgaata attggtcatg tcagacaagg ctgtcatagt caggattttg aatgacctag　240

aagtcagtca gtcattttcc tctgagaagc cagagttcct gctggaaatg aaacttgata　300

ggagctggag aagcagaagg ctaagaagag cagctttggg gcaaagaaca gggaagcaga　360

gagggggctg gcagatttct tcattctgtc ctattaggct gtggtggaag tacttgagat　420

gccaggttct gcatcacagt gctaactgcc tggcacatgg cagtgggaac acactctccc　480

ctctgatgtg taccaggaag tgtcaggggg acccacagca ggtgcttggt gtattcttca　540

ggtctcatgt tgaaacttca cagagcaccc ccgagtgtcc tgctcaggcc agttttgctg　600

cagaccaagt attgcagtcc agtttggcag ggtgggatct gagcagatca gccttaggcc　660

gactctccag tcaaggaaag gcctaggtgc attggtccac ctgtgtccct tccgaaggct　720

ggtctcacca gcctagagct ggcatgaaaa ggtcctgttt tgttcacagt actaggtgag　780

gccattcaga gtcatcagga ccttttttcca agcttgtact tccctgcctc tggtcaaggc　840

ttaaagggca gttccgtcct caccttttgt actctcttgc acagagtctt gaaccctgga　900

agcaggagga ggatatactg agttgggaag ttcctccttc ctccagtggc agatgtgtgg　960

gctcccaggt ttgaaactct agaggtcatt caggtgtgcc agtgaagagg cacatactca　1020

tgagagaacc aacaggctgg accttggagg ttatttgcac tagtgagttt caaatttgag　1080

ctagcatcag attcctctag agggcttgtt aaacacagat tgctgggtcc catccccata　1140

gtttctggtt cagtaggtct aggatgtggt ttaaaaatgt gcatgtctac caagttccct　1200

aaagaagaac ttggtagaca tgaagcagca gctgctgctg gtctgaagac caaactttga　1260

gaaccaccaa tttatacttg ggctgaaaaa aacctgtctg actcttttca gagcaaattt　1320

tgctgaggtg aggacagagt gggtggagaa atcttgaacc cactagggag acaagtggcc　1380

ctctcagaaa taggctactg caggtgggcc aacctaataa aactgagaag aggttaaggg　1440

aggatgctgg cagatgtatc tcttctccat gctggtctgg tccttgcata ctaccctaca　1500

gcaaggagcc agacctggtg agccccgggg ctggatcatt ttcatttcct attctgcccc　1560

ctgaggcagc agtgagttct aaaagtctgc attttcggat gcctttcctc agtctgggct　1620

ctgtggtatg aagaacggga ccctgagccg gggtcctggg catcggccct agcactgcct　1680

ctaatggaca gtaactgaag gcacctcatg ttactcaagg gtaatgtgag tgtggactag　1740

ctctctggtg ccttttgtgc tctgatattc tgggttcttt aatgatttac cctgacagct　1800

tcctcctcag ggtcaggaac ttctgctggc ttgttacttg tttttttattt tttccgtgta　1860

tgagaacttc tgttgatcag aatcccatcc agagactggc tcgccaaaag tgaaactaga　1920

```
gacaagtttg ggaattggag agaataactt ttctttttgg agtcattggc acctgcagtt 1980

gtgctgctgc cataacacct gcctacagag agaatgactg catcactgtc gtgcctgcct 2040

atcttacccc actgccagct tcacaggctg tctgatcagc tctggtttcc agggtgctca 2100

ggattgttat tcgacattcc ccactgcctg gcacagtgtg tggctcatgg taggcctgtg 2160

tgcatgctta ctggatggat ggaataagcg gttgtatcca gctacctctt cttttctcgc 2220

ttcttcttaa cttggtacag ttgtcttcct ttgccctcct cgcttccatc cttccttccc 2280

tgcttccttt gtactcattt ttactcctca gcactctggc agagctagca tgtacgtcga 2340

gtgctttggg ggttaaaagt atacacaaga caatcataaa acaccctatg caagccatct 2400

atgtgagggg ttcctccaga gctccccact cttcctcctt gtctcttctg cccactttgt 2460

ctagggtagc tgggaatgtt ttcactgtcc taggggaatt tgctgttctt cagattgaat 2520

ttgaccccgt tttcagcctt tatttcccac cagagcctga tggtgtttgt attggcaagc 2580

cagaagactc ctggcttgga gagaattaga gttagtacag cctgcctggc cctgtctttt 2640

cagcctctat ctgaaggggc aaaacaaatt tttcggcctt ggttaattgt tacttagccc 2700

ctctgatcca gcctgggcaa ctttcaggta gctcaggcac tgactagcct gaagtctctg 2760

ttgaaacagg gaagattaaa gttgatttga ttcatttgaa gtaaaatcag caggcttttg 2820

atgatttcat taatttcctc ccttctgaac accctcctgt tagcagtaat tggaaaccct 2880

gactctgttt ctcatttccc ccccacccct ctgctttaat ctgagacaac tggaaactgc 2940

actcagcttt ttcatttact ggaagaatgg tttgaagatg gttttaatga ctggctttga 3000

cactgtttcc agaagctgag actgttgccg tgcttaagtt cacacctacc tgggggcctc 3060

agttttgctc accttgcttc tataaaactg cttagttctt ggtgtgcagg tggaagaggg 3120

tccccatgag aattctcttt ttatcccagg caatatatat gcaagctttt cattactcat 3180

tttcatcact caacatttac agactgcctg gggtgtgtgc caggcactgt cctagtaact 3240

gagtgtgttc ccagcacctc ctcctggccc tggtggacgt ccagaggact aggtaggtga 3300

gattccagca ggatggtggc taaactcaaa ccttgggaac tgtagtctct ggggctttct 3360

ttctctatct gtttttatag ttgcaacttc agtttctgtg cttttttttt tcttgggcct 3420

gaagagtaat aaataatatg aaccaccact tgatgtcaga gaaatagcag gtagcaatag 3480

ctgcaacagc taatcactat tggcagttga caagatgtac aaacacttgc ttgtatatca 3540

tgtcatattg ttgtcctcac ggtaaaccat cacagccagt aaaggacaaa gccagaattc 3600

aacctaggcc ttcccattac aaatcaaata ctttttgttt attattgtta ttattttag 3660
```

agatgaggtt tcactgtgtt gtccaggctg gtctagaact cctggcctga agctgttctc 3720

ccacctgagt ggctgggatt acaggtggga gtcaccatgc ctggctctgc tttttgtact 3780

atgttgtttt gtttgatggt ttggttttgt ttttaacgct gacttcccat gctattgtct 3840

ttagtatgac ttcaaccact taagtgttaa gaacctatta tgtatgcatt gggtcttgta 3900

caaggaagtc agggtctcac aatctaatgg ggggaaaaga taagacaatt catcttagtt 3960

gcccttgagt gattcaggta ctgaatgcta ttagaaagaa gagaattaac cctgatgtct 4020

gtctagggag gcttccccag aagagccaag acttgaattg ggcatggtgg aaaggcaata 4080

ctcacctcta tctttctttc tctctctctc aaactttcct taaagttctc attgcctttg 4140

cactgcttct gtgaacagtc tttgtctcct ccccaccttt ggtgggaagt gcggggcagt 4200

cctggtcaag acactcatgc cctggcaatg tggctgccag agaatgttgt tgctaaccca 4260

ccagtttctt gttgatttgg agaggtcaag gccaggcccc cacttggctt gaagggacat 4320

tttcagactt ttctttctgt cacttggagt gtctatgcct ctcatatttc cctaataaac 4380

tcctcaactt tt 4392

<210> 476

<211> 4873

<212> DNA

<213> Homo sapiens

<400> 476

acaactggat tgggaaaggg agaggaggaa ccgaatcgag aggccatcta cgtggtccag 60

gcaggcctgg caaaggcagg aagagtccta gtgggaaaag gaggatgcta gaagccacct 120

gtgtctcagg ggacccctgg ggtcaagatc aactttgaag taggaggatc tggctgtgtt 180

aggggaaggc gacaggcttc agttcagttt caaagtttta aaatatgacc ttcagctgct 240

cccttcccca gcatgcagaa acacactcac tggccacccg aagtccccca ggctgtgctg 300

ggtcagggca gtcaggccac gcacacgtgt taaatagcgt atgcgtgcgt ggccctgcac 360

cctccctgct ctcggggagt caggcaaacc acagcacagg agcgaggacc aagggctatg 420

gcaggtcacc aaatctgggg ccatttcatc aaacaaaagg cccccagggg ctgagggctt 480

```
cccagggggag atggcccctg ggctggaccg gggaggttgg gcaggactaa gtgggaggct   540

gccagctcca tcctatggga gcaggcctcc aaagccactc gggggagctg ccccttggcg   600

tgctgtgctg aggccccact gcccagcaca cagacatcct cttcctccaa ggggcccctc   660

aagacaatag acctggcatt ccaggtcgcc tgcctgtgtc atgagtcaga atccccgtgg   720

tgcccatggc ttccctgcct ttcttttttc tcaggctgtg tttatttata gtgccattcc   780

ggtaccttcc gaagctatct gtctgattct tttagggatc aattgcaaag agaccttgct   840

attgggcagc tttttagtca tttaatgcaa aatgccacac tgctttgcag gtcaggtttt   900

aatgatctgg aatcgatcca agctaagtgg cttttgatct tgctgcagag tgaagatgcc   960

ccacagaagc caggagccgc tgggcaacat gctccttatt agagctgatg gcttgattct  1020

tgctgcattt tttagtctgt ttcagagtga ttttttccttt gtgtttgagc atgtgtggtt  1080

ttttttttct cctaggtaat tttgagtgtg gaaatccaga gaatctaaaa agcaaatgca  1140

ttcctgttat ggaagcccaa gaatatatag ccaatgtgac cagcagctcc tccgccaagt  1200

ttgaagccgc actgacctgg atactgagca gtaacaagga cgtgggcatc tggtgagtgt  1260

gggcagggtg gcgacgcagc atgggtgcct gcaaccactg tcctcgctcg tcagctaaca  1320

cccgtgctcc aacagagctg tctcaggtct gaagctggag gctgggtctc ccagcagaat  1380

catgtgggtt aggatggaag tggggcaaca aaagcaagaa gcatttggaa tgcagtgtaa  1440

ggagcagctt caagatgaga cacaaaatcc aggtgttagg atgttagcct ggtgttccag  1500

ctaaatcctg tctcaggtaa ctcagtctgt gcctttctca ttcatcaaca acaccacatg  1560

gtttgttggg gaaggcattt ttctgcactt cccctcctcg ggagctagtt tttatttgta  1620

gatgaaatta ttctttctgt atgttggttt tacttactat ggaaatcgca taaggaaata  1680

ctggatttta ttctgaccag gcagtttctg cctcattttt atcactggtg agcactgtta  1740

gaaaaggtag caaacccttt catgaggctg aaaggctgta tctggcggct cagcccaggg  1800

ggaggggcgt gtcagccaac agccaggcag ccttgagaga cctgtcccct gctggcagag  1860

cagcatcact tccccacttc ccactctcgg tgtttgtggg ggtctctgtt caggttatag  1920

ctcttgatat taaaacgtct ctagagtttt gttctttttcc tctctaatcc acccaaatta  1980

ctaattccat cagcactgca tccagcagaa gcccctcggg cagctccacc tcaagctgga  2040

taactggatg catggcacga ttaaaatttg ttggcttaaa aaaaaaaaaa agctgccctg  2100

agtagctgag caattttcct gtgttagaaa aggcggagga gaatacggat tttatcctca  2160

gcagcagcgc tcactgaagc tgctaacaca gaagaatgat gacactcacc ttttcatgtt  2220
```

ggggaaggca gcctggaggg tggcagagcc gctcaggatg accatattga aagtgggtcc 2280

tgagaaatca ggacacttgg gatgccagcc attccagcat gcagcctcaa gagcatgata 2340

ttctcgccct gggtcaccta gctggaagaa ggctctggtg tccccacctc tgcaggtcct 2400

gacacctcct ggccagagac catggtggag gtgccgtggc tggggtctgg cctcggagag 2460

cctggtggtt ttcattcccc atgagcctca cggattcccc atgagcctca tggatgcccc 2520

atgatcttta cacttaaaca gcttatgtgc ctccttgtca ccgaggaaaa gtgcaacctc 2580

ccagattctg tctttcagtt cttgccatgc aattgcaaag ctagtgattc agtaaacatt 2640

tccatttctc tatgctggga ggtgggaatc caatttacag tttaatctcc tgcatgctga 2700

gagaggctgt caaagacctg acaggggggac gttgctttag cggtaggggt tcaagcctgc 2760

tgccgtcttt aaagctttat tcattctaag tagccaatgt gggaaatttc tggaaagaat 2820

gcagccagga taccaagcct attctataag caagtagagg ccttgcgtcc ccactttcct 2880

tcgcttcctc ctgtttgaag tggggcttgc actgcctctc cttggagctt ccaacatgt 2940

tcagagccct gtgtcctgtt tcaggttgaa aggagaagac cagtctgaat tggtgacgac 3000

tgtggacaag gtggtctgcc tggaatctgc ccaccccgc atgggtgttg gctgccgcct 3060

gagccgggcc ttgctcactg ctgtcaccaa cgtgctcatc ttcttctggt gcttggcttt 3120

tttgtggggg ctcctaattc tcctaaaata tcggtggcga aagttagaag aggaggaaca 3180

agccatgtat gagatggtga agaagattat agacgtggtc caggaccatt acgtggactg 3240

ggagcaggac atggagcgct atccatatgt aggcatcctg cacgtgcgcg acagcttgat 3300

ccctccacag agccggaggc gcatgaagcg tgtctgggac cgagctgtgg agttcctggc 3360

ctccaacgaa tcccggatcc agacggagtc ccaccgcgtt gcaggagagg acatgctggt 3420

gtggagatgg actaagccct cttccttctc tgactcagag cgataagccc cgggcgggga 3480

cttgttcccg gtcagcctgt cccaggacag cccactccag aggcacagga gggtcaccag 3540

gcctggggtg ctgaattcac acttgccttg actttcagtc tcgtcctgac acgattccaa 3600

aggtctgcca tactcttcag aggagttcgg ctcgcaggaa aatgtgggct cctttaaag 3660

ggagggggag aagccagggt gatagcccag actctgccct gttgtgctgg cagaaacggg 3720

gagaagggtt gagtttcat gaatagaaaa caagagcagc agctgtcagg cccagctgac 3780

aagcgtgggg ctggtgggct ggggcatggc cacgccaggg agtctgtcac ctgggaggtg 3840

gggcagggat ggtgtttcgg gtggcgggat ggggagcagc ttggtccatg tgccttcagg 3900

gggttgttac ctgagagctc cagggtgaag ggagaaagcc tgtgctctgg ctggctgggc 3960

ctctatcctg aagagggaag gtgctagaaa ttagaacaag tgactgtagg ggggaccgtc　4020

tagaaacacc aggcccagac acacggtccc tcaggtcagg aggagtgagc agccggcaca　4080

gcctcctggg aggatcccga agtagggact ggggctgaga gcagagagga gggtcgggca　4140

gccccagggc gggcgggccc gcctcagtgt tgcttctcac agaagctgcg actctagacc　4200

aggcctgcag ccagaacgcc gattccggga gcttgggagc cctgcgtcag ggcccagagc　4260

ctcgcacttg ctgtgtgcga agatcgcctt gctttactgt gaccacagcc ccgacgcggg　4320

gctgtttaac aagaacttca gcgcagccgg cgtttctgtt accccggccg cggctcttgg　4380

cggcgggaga ggcgcagtgg ctgcaggctg ccccctgccg gccacaaggg agcagcgtcc　4440

gcgccgccgc ccaccggccc tcccgccagc tcctcagcct gctccctggg aggcaggctc　4500

cagaagcacc ccgacggggg gccttattaa gtgcgagaag cctctccagc gagtcttccc　4560

cgtgtgtcct catctgcggc aggcaggaga gggggagcaa acaggaaatt ccacagctgc　4620

ctccagaaac attaaccacc cctctctagt cttactggta tttttttgtt tccttaataa　4680

agctccagtc tccctcattt gagcaatact ctcatttcct ctgatgtctg gatgatcggc　4740

agggcaggaa tctgagcgct ggccccgtgg tgaggccatg ttctcataat caggctccag　4800

ccagaaaaat aagaaacacc gcaacaggct tcagtatcag ggctgaaact gctggatgaa　4860

taaactattt att　4873

<210> 477

<211> 4040

<212> DNA

<213> Homo sapiens

<400> 477

attttctaag ctttacattt ccggtgtagt atcttgctct gaccacagcc ttctttcttt　60

ccacttggtc tagtttatct tcactcccat tgctccagct tttttccctc aagagaaaca　120

gcctgccttc cagcctacct ctaggctggt caattcctcc caccatgtca tcctgtcctt　180

ggtttctctg ccgtccttct tctctatttg actctctctc ttgcagtgtg gctgaaatgc　240

tgactcagca tctttcttgt gtctgtcact cccctgcttc tgtgcctcac ctttacagca　300

aaattccgat acttgttatt acttccttta ccttcttctt cctataccta tgggatgaac　360

acttcctaaa aaacgatcat acagtgatac aggttggtat cattgctaac acatggtctt　420

cagttgcatc tgagccccag tgctgccttt cttttagttt tttttttttt tttttttttt　480

tgagatggag tcttgctctt tcacctaggc tggagtgcag tggtgcgatc tcagctcatt　540

gccacctcgg cctcccaggt tcaagcaatt cctacacctc agcctcccaa ctagctggga　600

ttataggcga ccaccaccat ggctggctaa tttttgtatt tttagtagag atgaggtttc　660

accatgttgg ccaggctggt cttgaacacc tgaactcaag tgatccacca cctcggcctc　720

ccaaagtgct gggattacag gcatgagcca ccacacctgg cctctttttac ttctttttta　780

ttgttatgtg ctcagtcatt tcctaggatt tttttctaaa ccccccctact gattgccatc　840

cacttccact ggatcccttc ctgcttagag cagctgtgta gcacagaggt tatgagaaga　900

cactcaccat ccagactgtg ttcaagcctt tgctctgcaa gctattttat gatcctaggt　960

gatttaactt ctctttgtta ttatttcttc atctgtgaaa ggaaaataat aatggctcct　1020

accttataga atcattgtga agactgtatg atttagtatt tcttaaaaac agttagaata　1080

gcgcttggca catagtagga actttgtaag tatcagtcat tactgcctat tttattattg　1140

aacattgagg ctgttagacc tcatatctct ccgttttgat ccttcatatc tgcagttttg　1200

tcaataaccc attcaatctt agtgtatttc cttcattctc agaaatgata cattaagagg　1260

gcatttctct tcctgtttct ttctgcctct agcctacttt catgtttatc tctctttttt　1320

atatatatct ttaatctatt ccttgaagtg aaatctatac tctgagccca caagcatact　1380

aaaatttctt ccattctaaa aattatatca tcattatcat tattatcatc tacatcatta　1440

tcagaaacaa caaaagaagg aaaaaagaat attcctctga tatttcctca tatgctttct　1500

caggtccttt cttcttttttt tctcttatat agatttttttt tttgaaagat tgtgtttccc　1560

ccaaggtgca ctaccttctg gctataattg ctgatattga tcaaggaacc taatgattag　1620

atgactgtga cattcaagga tttgctttct ctctttagtc cactcggact ctcttctgga　1680

tttcacagtt agccagtttc gactgtcata acataagcac ttgtggtcaa ccattccact　1740

ctcacccggt tctgcacttg tctctgactt agccttgtct tttttcatag gtcttcattc　1800

tatttcctaa atatatgctt tcctccaggt cccattttttc accgtgatcc cttgttctac　1860

gtatgttccc gtggtaattt aatctattcc cgtgatttat cttctatatt tactgtatgt　1920

gccagtgact cacaaatctc tatttctagc ccagaactct ctcctgagcc ttcagaccac　1980

tttccaaata tttcctagat gtgaacaccc ataggcatcc caaattcagt acatctaaaa　2040

```
ttaaattcat tatgctccca attgtcatat tgcttctgta tttctatctt agtggatgcc 2100

tgcactatca acccaaatag cccagggcga aaaccaggta gttatcttag agttcttcct 2160

ctccattcta ttcagcatac aagcccctgt tgatatcact atgcttaaaa ttgtatctca 2220

catctgtttc ttccttagtc ttaactctcg ctacgctacc ttaatttaga ccttcgtttt 2280

cctttatatg agctattaca agaatctctg aatgggtttt ttccttaatg tcacctacta 2340

cttaatctat actgtacaca gttgacaatt atcatactag aacattaaac tgatcatgcg 2400

ctgttttgct taaacttttt agatggtttc caactgcctt cattttataa tccaactctt 2460

atgcagtatt ctttatcaac cagcctcagt tcttgtcaga atccctctgt gagcgtatga 2520

cacagatcca ttccgccatg tgatactctt ctctttaatg cctacatgct tctattcccg 2580

tcctctggaa aacttttatt tattttccca gacctggccc aattgctcta tcttggggaa 2640

gcttttcaca atcattcatg aatttcaaac atttatttac tctaattttc aaagtgtttt 2700

ttagatggca gttatcacat cggcctggag ctatttgaat tcccaaatgg ctctatgcat 2760

tcctatattc ccaacactca ggacgctgcc tggaacttag caggtgctta atgaatgttt 2820

gaatgaaatt tgaactaagt attttagaaa gttacaggag atagtttgtc tcattggagc 2880

tcagagtcaa ggtagggaaa atggggaaaa aaggagggca tcaaaggaag aaggaagact 2940

gtagggagcc caaatgttat aatatatata agttccccac gaagagaaaa ggaagaaacc 3000

atgaagaaat ataccttgtg tataagagaa tattgggaaa ttgcactata aaaggaaaaa 3060

agaatataaa taaagctctg gcaaccagtg cacccaagga atgaccagac agcaatgaca 3120

gtagaaggaa aagggcaacc ctgtgagaaa gaaaagcctg agcagcgcag attgtcagag 3180

agcatctgca aaagaaaggt gagagctttc tgcaaaagaa aggcgagagc tttctttgca 3240

actgctttgc acatttctgc taagtaatga tgctacaaag ccacacattt ttccatttct 3300

ctctaaaact ccttcaaaga gcactgagac caagctgtat tctctgtaat ttgcccttag 3360

ctgtatggaa aacatctttg acctacagct agtatcctat gcagaaacct tccagtgctc 3420

tgctattctc cagggctttt cttgcagaaa ataaacaaag tgatgttctg tagaatgttg 3480

accattattc ctgttcctga aaggtactgg ggaagataag tccaggacag tcatgagaat 3540

cactcttctc agttttgtaa agtggggtgg acacatccac cttgcataga gctgcacaga 3600

acttccactg tttgtgccaa tgtggcctca tatatatagg tcagtttgaa acagtattaa 3660

atattcacaa aataaactgt acgtatatgc atgcacatgc cttttgtgtg tgaacaactg 3720

aaacattctc tgtttgtttt cgccttagaa atattagctg cccccgtccg ggcgcggtgg 3780
```

ctcacacctg taatcccagc actttgggag gcccaggcgg catgatcaca aggtcaggag 3840

atcgagacca tcctggctaa catggtgaaa ccccgtctct actaaaaata caaaaaatta 3900

gccgggcgtg gtggcgggcg cccgtagtcc cagctactcc ggaggctgag tcaggagaat 3960

ggtgtgaacc caggaggcgg agcttgcagt gagtcgagac ggcgccactg cactccagcc 4020

tgggcgacag agcgggtctc 4040

<210> 478

<211> 3681

<212> DNA

<213> Homo sapiens

<400> 478

tttccatgct tcatgcctgg ccctgtgagc ccacctgccc gcagccctac ttcccaggcc 60

cctcatcacc cctccactgc tcccgtctgt ctccatgctc cagggctagc cgtgggcctg 120

gaccccgagg gctacgggaa ccctgacttc tgctggctct ccatctatga cacgctcatc 180

tggagttttg ctggcccggt ggcctttgcc gtctcgatga gtgtcttcct gtacatcctg 240

gcggcccggg cctcctgtgc tgcccagcgg cagggctttg agaagaaagg tcctgtgtga 300

gtatagggtt ggggtgcctg ggccatgggc aggcaccagc atgggaggtc tcatggccgg 360

actcatggcc tgtccctatc cccagctcgg gcctgcagcc ctccttcgcc gtcctcctgc 420

tgctgagcgc cacgtggctg ctggcactgc tctctgtcaa cagcgacacc ctcctcttcc 480

actacctctt tgctacctgc aattgcatcc aggtacctgg cccagcctgt ggagaaggga 540

ggcacctggg ctgtggatgc ctgaatatgc acagaccgtt gctgcctctt gcctgccagg 600

gcccctтcat cttcctctcc tatgtggtgc ttagcaagga ggtccggaaa gcactcaagc 660

ttgcctgcag ccgcaagccc agccctgacc ctgctttgac caccaagtcc accctgacct 720

cgtcctacaa ctgccccagc ccctacgcag atgggcggct gtaccagccc tacggagact 780

cggccggctc tctgcacagc accagtcgct cgggcaagag tcagcccagc tacatcccct 840

tcttgctgag ggaggagtcc gcactgaacc ctggccaagg gccccctggc ctgggggatc 900

caggcagcct gttcctggaa ggtcaagacc agcagcatgg tgaggacaga acgctctggc 960

caccccagcag ggcagttggc tggctttac tgaaggtggg tggaggtggc tgggctggct   1020

gtgatctctc cctggcctcc tagatcctga cacggactcc gacagtgacc tgtccttaga   1080

agacgaccag agtggctcct atgcctctac ccactcatca gacagtgagg aggaagaaga   1140

ggaggaggaa gaggaggccg ccttccctgg agagcagggc tgggatagcc tgctggggcc   1200

tggagcagag agactgcccc tgcacagtac tcccaaggat gggggcccag ggcctggcaa   1260

ggccccctgg ccaggagact ttgggaccac agcaaaagag agtagtggca acggggcccc   1320

tgaggagcgg ctgcgggaga atggagatgc cctgtctcga gaggggtccc taggcccct   1380

tccaggctct tctgcccagc ctcacaaagg tgagtggggc acccccagct gccgagctcc   1440

cctagtcagc agcctcatac ctcacattct cctgtggccg cacctcacag ccccgcccg   1500

gcccacaggc atccttaaga agaagtgtct gcccaccatc agcgagaaga gcagcctcct   1560

gcggctcccc ctggagcaat gcacagggtc ttcccggggc tcctccgcta gtgagggcag   1620

ccggggcggc cccctcccc gcccaccgcc ccggcagagc ctccaggagc agctgaacgg   1680

ggtcatgccc atcgccatga gcatcaaggc aggcacggtg gatgaggact cgtcaggctc   1740

cgagtgagtg tggccgggtg ggcgggacgg ggtgcagccc ctcggaggcc tcacctgggc   1800

ccagagctgc ctccgggcct ccccaggtga ctctggatgg catttggagg acaaatgggc   1860

agaactggcc cagctccctt actatgccgt gcccacaaac catggtgcct tgcggggagg   1920

gccacccctc ctaggctcta cgcggcgcag cccagcctag ggcagagtgc gggaggatgg   1980

ggagctgggg gtgctttcct gtttccttcg tctggtgaaa gctttcactc tctcctctgt   2040

ttcaactaac cctctgtctg ccttttctgc cactttcctt tcctgcctct ccagatttct   2100

cttctttaac ttcctgcatt aaccctgggc cgtggttcct acgcccgagg ctcccttccc   2160

ttccccagcc gcactcatgc cctgctcctg tcttgtgctt tatcctgccc cgctccccat   2220

cgcctgcccg cagcagcgac gaaacgtcca tctgaggagc ctgggccttg ccgggagggg   2280

tactcacccc acctaaggcc atctagtgcc aactccccc ccaccattcc cctcactgca   2340

ctttggaccc ctggggccaa catctccaag acaaagtttt tcagaaaaga ggaaaaaaag   2400

aatttaaaaa aggatctcca ctcttcatga cttcagggat tcattttttt tatacgctgg   2460

aaattgactc ccctttccct tcccaaagag ataggacct cccaggatgc ttcccagcct   2520

ctcctcagtt tcccatctgc tgtgcctctg ggaggagagg gactcctggg gggcctgccc   2580

ctcatacgcc atcaccaaaa ggaaaggaca aagccacacg cagccagggc ttcacaccct   2640

tcaggctgca cccgggcagg cctcagaacg gtgaggggcc agggcaaagg gtgtgcctcg   2700

tcctgcccgc actgcctctc ccaggaactg gaaaagccct gtccggtgag ggggcagaag 2760

gactcagcgc ccctggaccc ccaaatgctg catgaacaca ttttcagggg agcctgtgcc 2820

cccaggcggg ggtcgggcag ccccagcccc tctccttttc ctggactctg gccgtgcgcg 2880

gcagcccagg tgtttgctca gttgctgacc caaaagtgct tcatttttcc tgcccgcccc 2940

gcgccccggg caggccagtc atgtgttaag ttgcgcttct ttgctgtgat gtgggtgggg 3000

gaggaagagt aaacacagtg ctggctcggc tgccctgagg gtgctcaatc aagcacaggt 3060

ttcaagtctg ggttctggtg tccactcacc caccccaccc cccaaaatca gacaaatgct 3120

actttgtcta acctgctgtg gcctctgaga catgttctat ttttaacccc ttcttggaat 3180

tggctctctt cttcaaagga ccaggtcctg ttcctctttc tccccgactc caccccagct 3240

ccctgtgaag agagagttaa tatatttgtt ttatttattt gctttttgcg ttgggatggg 3300

ttcgtgtcca gtcccggggg tctgatatgg ccatcacagg ctgggtgttc ccagcagccc 3360

tggcttgggg gcttgacgcc cttccccttg ccccaggcca tcatctcccc acctctcctc 3420

ccctctcctc agttttgccg actgcttttc atctgagtca ccatttactc caagcatgta 3480

ttccagactt gtcactgact ttccttctgg agcaggtggc tagaaaaaga ggctgtgggc 3540

aggaaagaaa ggctcctgtt tctcatttgt gaggccagcc tctggctttt ctgccgtgga 3600

ttctccccct gtcttctccc·ctcagcaatt cctgcaaagg gttaaaaatt taactggttt 3660

ttactactga tgacttgatt t 3681

<210> 479

<211> 4360

<212> DNA

<213> Homo sapiens

<400> 479

ctgaaatgga cttgctttca gacatttcag aggaagaccc ctttggggag gctgaccaga 60

tcacactaga cagcttagag cacctttcca caggtgaaat atcggagcag ggggattctg 120

aagttgctat gcctgatttg gtcttggatt ctgccatagc cccttctcag cctgactgtc 180

cttctcccat ccatgggaag actcttaaag cagctgacga cagtgattct gagtttggtt 240

acttctcctt cagtttctcc aaatgttttc cctccggctt cccctccctt cttgatgaag　300

atggatatct tgctttcccc agcctcccca aggtctgggt ctccttcctc cccgctggtg　360

tgcagcacta tgtcccaatc acctcccctt cattcattcc ttcccttatc ctcatctttg　420

ggctacttct gtctgcttct cagtcagttc ctttttctct tgccttttcc cttcctctgg　480

ctctatccct ctgctatctg gaggctaaag ccgcctcctt taatgtttct tatgactgtg　540

acttgaatga caagctcgag gaggaggaag tagttgctgg catgcctacg taagctcagt　600

ttgtggagtc aacacaatac actttatctt aaacccttcc taatatagaa tgtaaatgtg　660

tgcatacatt tcaccactga ttaccctcaa catagtagta cctgcacatt ttcacacaca　720

caatatttta gtgcatgaga aataagtgta gacacttctc cttcattgat accattgacc　780

agttccacac attctaagtt aggagcgaaa ttgtaggatt attttacaaa tatctagatc　840

aaagtagatt tgtaacagaa ggtgtggggg aggagggaag gaggagggaa cctgtattgc　900

ccgtaacaat ccatacaggg tctctccatt ttgcaaacag atattaatgc tgttccttta　960

ggatgacatc tttttgtttt gatatagaat ttaggatgca gtggacataa ctgttcctga　1020

tgtatattag tagaattcct tagtactgtt atttctcttg ttggaaaccc aagtgtgttc　1080

tagcatctat gaggatgtat ctgtaacctt tactcctgac atttgtaagt ctaatctcaa　1140

aagctcctta tctccctatt attgtagtat ttggagacca gatgaatttt agctagtttt　1200

tttttctaac cttaaattat gtaattatat ataagagtca ctatagggta ttttataagg　1260

aaggtactat tctgttgtct ttaacaaatg tatgtgaaaa gtgaaacatg gctttttgaa　1320

aatttagact atataacact aagattgggc ctcatagtgc tcctttattt aaaattaggt　1380

gtttggtttg aggatttta cccctatata aggcaaattt ttttcaagta tcctacctct　1440

gtgctactaa gtcagcatta acatgtacaa tatattttg attattttgt taaatgtggc　1500

ctggtgattt agtgcctcat attctgtgga tcctaccaat acatacagta aatcacaaaa　1560

tttagagcaa acctaaagaa aaatgtaaag ataattgcag tgagtatgca ttgtaggaca　1620

attgttaaaa gtttacctga ggaatgtcaa agatcaacat tttagggaat aaatgttga　1680

ccaaggagtt ggaagatgtt tcttaacaga ttattgaatg tctgtgtctc attttcaca　1740

tctgataaag actctgagct ccttgcttac ctctgaaaaa tactatgaat ggttaaaaag　1800

gtaagccgtt tgaactctca gatttgacac tatcatccta attaagaagg aaaaggatat　1860

atattaggaa ttaacctata aaggttaaat gatttgcctt tgataaggga gtcaatattt　1920

ttattctcac cattttttcc cttgagtcaa aattcagtca gtatttgtta gttttaaact　1980

●

```
tctacattca ttcttttgaa tcatcagata ttgagaaatg tccaactatg aaaaactgtt  2040

cttatttaaa gaattttatg taagtggtta tatttcaaag attattttta aatacccacc  2100

attttaatat gaaactagtt aaataagcca atcccctcc cccagccaga aaagaaatcc  2160

atatttaaca aactgaatca taggttgaac atttgttccc caatataaag ctaaaaacga  2220

attttacatc attatacttt accccatcac tagttgcttt agacatttca aattagaaca  2280

gattgaatta tgccatttt gcactctcat attcttgttc ctgagtacaa aatattcaaa  2340

agcagagcat aatctaggga ctgagaaaga gtgaagcttc catcctccat tccacctttg  2400

caaaggatca tttccatcat tcgtacaaca ctgtaggtga agaaagacca aagaggctta  2460

atattctgca tcttctgagg gcctcacagt aaaggcgaag atggaagaag aggaaacgca  2520

gctggaagag aaaaattcct tgagagtaga aggggataat atttatgtca gacatagcaa  2580

tttaatgttg gaggaactgg ataaggccca ggaggacata ctgaaacatc aggctagcat  2640

tagtgaactc aagcgcaatt ttatggaatc cacacctgag ccgcgcccta atgaatggga  2700

aaaacgacgt atcacacctc tgtccctaca gacacaaggg acacgtgctc ccgagtcaga  2760

agggccttgc actggagcca gggatgctgt taagccacca gtggtaaaaa cagagatggt  2820

aacaatttct gatgcctcac aaaggacaga aatctccacc aaggaagtcc ccattgtcca  2880

aactgagacc aaaaccatca catatgagtc tccacagact gtaaaaggtg gaatttctga  2940

aacaagaatt gagaaacgca ttgtgatcac aggagatgga gatattgatc atgaccaggc  3000

actggctcag gcgatcaggg aagccagaga gcagcaccct gacatgtcgg tcacaagagt  3060

ggtggtacac aaagaaacag agttggctga ggaaggggaa gattaagtaa gaaagtcatt  3120

ttttaaacaa cactcaactt tgtgaacccc tgaagatttt ttgaccgttc caagtcttaa  3180

tgccacacca ctattccagc gaatttatgc tacaactggt aacaatgacc agaagcctga  3240

agaattaaaa tgccaacacc aaacctttcc ttaccagctc tggtctatat tgctcccatg  3300

catttaatat attattttgt tttataacca cttctaaata ttctcagttc tttctttttg  3360

ttgttgttaa ttaagggggtt ttggttttgt tttctgttta ctttgtgtgc aactacctgc  3420

ttttaatgac tcactttgat caaatgacag tgaacaaagc cagcccaagc tggtaaggtg  3480

ctgttcactt gaacaggtgc tgttgcgcag aaaggaaact ctgtgactaa tttagatagt  3540

ggctttcctt cttctggatt cttttcattg aattctcaca gtaaatattt acggagtttt  3600

caaattgcag caaatatact gtatgagaaa atattaatac agattaaaag cctttcttac  3660

atcttgaaaa ttttctaata tttgagaatt tcacagggat gttttttata ttggaccctt  3720
```

ttgactttcc agtcctgtga ctttctactt ttagtagaga gtcagaatct ctggactgga   3780

gaataatgaa gaagttcact gactgtgcac tgtgcttaga gaccctgccg caccacagtg   3840

ccaatgcttg tcagacacat gcccttcggc agcattccag aacaggaggg aagagaaaga   3900

gaaactttc ttcccttcta ctaaaagatt caggcagctt aaaaccttag tgctttcttt   3960

cttaacatac ccacatttca attctttcca ttatttgaac acttgggtag aactcttgct   4020

ttgtattaaa cctctttgtc tacacatgta aaacttacct tttgttattg agcaggccta   4080

tctctttcag atagttttat gattcacaca ggtttgagga tgctggggag aggggagggg   4140

ggctgtggtg gtgttctgtt ggttacaaga aagttatacc atttaaagct ggcaccagag   4200

acccgatagg gacttattaa ctatattgaa cattttttcc tttgcctttg accctatgta   4260

tagttacgat gccagattag atttatagca gcctcaagtt gtattaaatg atattttgct   4320

tcctgtaata ctattataaa ataaagtttg tttattctct   4360

<210> 480

<211> 3951

<212> DNA

<213> Homo sapiens

<400> 480

ctcgttatgt tgcccaggct ggtctcaaac tcctggtctc aagcagtcct accgccttgg   60

cctctcaaag tgctgggact gcaggtgcat gccaccatgc caggccttct accactttta   120

cctaggcctg ctcaccccag gctggcacct ccctcagagg tgggaggtga aggtggctgc   180

tgctgggcat ttaggaggta caggtgcaga ctatgttgtg gattctcaga ggactgagaa   240

gctctctgtc tctctctcta ggaggctttg atagtgttat caaagtgggt ctccagtgtt   300

tctggaactt tcctcccctt ccttccttac ctaattcctt ctttaaattc caggacctgg   360

aatttatcct gtctcgacac ttcttgtcca acagtgagcc ccctgtcttc acccccctaa   420

tcccctgtct tcacatccct cttcccactt tatttgcttt ccccatggac ccatactcag   480

ggttttggga ggatggcagc ggagtatggt ggaggagagc gattatttaa agtagaaacc   540

caaagctttt attatagtaa acttggaaaa tacaagagaa aaattcaccc ctagaaaatt   600

```
attgtaaaca tctagtttgt ttccctctgc atattttaaa aactggattg cctcatttta   660

ccttgtgtta gtgtcttgat ttcattgtta cgccgcctac cccctccaca gtgtacactt   720

ggagtgcgtc cttctgtggt ctagttattt tcacttggag gaaggaactt tcacagaaaa   780

tgtgttgtgt cagtcctttc tactcattaa ccaagaaatc acaatgttgt tttctttctc   840

aatgtagaga agtcattcag aattcaaaag aagttctaag tttattgcaa gaaaaaaacc   900

ctgccttcaa gccggttctt gcaattatcc aggcaggtga cgacaacttg atgcaggaaa   960

tcaaccagaa tttggctgag gaggctggtc tgaacatcac tcacatttgc ctccctccag  1020

atagcagtga agccgagatt atagatgaaa tcttaaagat caatgaagat accagagtac  1080

atggccttgc ccttcagatc tctgagaact tgtttagcaa caaagtcctc aatgccttga  1140

aaccagaaaa agatgtggat ggagtaacag acataaacct ggggaagctg gtgcgagggg  1200

atgcccatga atgttttgtt tcacctgttg ccaaagctgt aattgaactt cttgaaaaat  1260

cagtaggtgt caacctagat ggaaagaaga ttttggtagt gggggcccat gggtctttgg  1320

aagctgctct acaatgcctg ttccagagaa aagggtccat gacaatgagc atccagtgga  1380

aaacacgcca gcttcaaagc aagcttcacg aggctgacat tgtggtccta ggctcaccta  1440

agccagaaga gattcccctt acttggatac aaccaggaac tactgttctc aactgctccc  1500

atgacttcct gtcagggaag gttgggtgtg gctctccaag aatacatttt ggtggactca  1560

ttgaggaaga tgatgtgatt ctccttgctg cagctctgcg aattcagaac atggtcagta  1620

gtggaaggag atggcttcgt gaacagcagc acaggcggtg gagacttcac tgcttgaaac  1680

ttcagcctct ctcccctgtg ccaagtgaca ttgagatttc aagaggacaa actccaaaag  1740

ctgtggatgt ccttgccaag gagattggat tgcttgcaga tgaaattgaa atctatggca  1800

aaagcaaagc caaagtgcgt ttgtccgtgc tagaaaggtt aaaggatcaa gcagatggaa  1860

aatacgtctt agttgctggg atcacaccca cccctcttgg agaagggaag agcacagtca  1920

ccatcgggct tgtgcaggct ctgaccgcac acctgaatgt caactccttt gcctgcttga  1980

ggcagccttc ccaaggaccg acgtttggag tgaaaggagg agccgcgggt ggtggatatg  2040

cccaggtcat ccccatggag gagttcaacc ttcacttgac tggagacatc cacgccatca  2100

ccgctgccaa taacttgctg gctgccgcca tcgacacgag gattcttcat gaaaacacgc  2160

aaacagataa ggctctgtat aatcggctgg ttcctttagt gaatggtgtc agagaatttt  2220

cagaaattca gcttgctcgg ctaaaaaaac tgggaataaa taagactgat ccgagcacac  2280

tgacagaaga ggaagtgagt aaatttgccc gtctcgacat cgacccatct accatcactt  2340
```

```
ggcagagagt attggataca aatgaccgat ttctacgaaa aataaccatc gggcagggaa   2400

acacagagaa gggccattac cggcaggcgc agtttgacat cgcagtggcc agcgagatca   2460

tggcggtgct ggccctgacg gacagcctcg cagacatgaa ggcacggctg ggaaggatgg   2520

tggtggccag tgacaaaagc gggcagcctg tgacagcaga tgatttgggg gtgacaggtg   2580

ctttgacagt tttgatgaaa gatgcaataa aaccaaacct gatgcagacc ctggaaggga   2640

cacctgtgtt cgtgcatgcg ggcccttttg ctaacattgc tcacggcaac tcttcagtgt   2700

tggctgataa aattgccctg aaactggttg gtgaagaagg atttgtagtg accgaagctg   2760

gctttggtgc tgacatcgga atggagaaat tcttcaacat caagtgccga gcttccggct   2820

tggtgcccaa cgtggttgtg ttagtggcaa cggtgcgagc tctgaagatg catggaggcg   2880

ggccaagtgt aacggctggt gttcctctta agaaagaata tacagaggag aacatccagc   2940

tggtggcaga cggctgctgt aacctccaga agcaaattca gatcactcag ctctttgggg   3000

ttcccgttgt ggcggctctg aatgtcttca agaccgacac ccgcgctgag attgacttgg   3060

tgtgtgagct tgcaaagcgg gctggtgcct ttgatgcagt cccctgctat cactggtcgg   3120

ttggtggaaa aggatcggtg gacttggctc gggctgtgag agaggctgcg agtaaaagaa   3180

gccgattcca gttcctgtat gatgttcagg ttccaattgt ggacaagata aggaccattg   3240

ctcaggctgt ctatggagcc aaagatattg aactctctcc tgaggcacaa gccaaaatag   3300

atcgttacac tcaacagggt tttggaaatt tgcccatctg catggcaaag acccaccttt   3360

ctctatctca ccaacctgac aaaaaaggtg tgccaaggga cttcatctta cctatcagtg   3420

acgtccgggc cagcataggc gctgggttca tttacccttt ggtcggaacg atgagcacca   3480

tgccaggact gcccacccgg ccctgctttt atgacataga tcttgatacc gaaacagaac   3540

aagttaaagg cttgttctaa gtggacaagg ctctcacagg acccgatgca gactcctgaa   3600

acagactact ctttgccttt ttgctgcagt tggagaagaa actgaatttg aaaaatgtct   3660

gttatgcaat gctggagaca tggtgaaata ggccaaagat ttcttcttcg ttcaagatga   3720

attctgttca cagtggagta tggtgttcgg caaaaggacc tccaccaaga ctgaaagaaa   3780

ctaatttatt tctgtttctg tggagtttcc attatttcta ctgcttacac tttagaatgt   3840

ttattttatg gggactaagg gattaagagt gtgaactaaa aggtaacatt ttccactctc   3900

aagttttcta ctttgtcttt gaactgaaaa taaacatgga tctagaaaac c   3951
```

<210> 481

<211> 1669

<212> DNA

<213> Homo sapiens

<400> 481

gtttgctgaa	ttaatggtcc	ctatcgtagc	taatgtctga	atgcttacca	tgaccaggca	60
cggtataggc	aatctccatg	catgatctca	ttgaattcaa	cgatttcctg	tagtcttaga	120
gacctgtcaa	tatctcctgc	tacatgagct	cagctgccat	caagcactgt	gttcgctgct	180
tccttcacat	ctgctgtctt	aagggagctc	ccacttccat	gcggcccccg	tggagctgta	240
atttggcctc	aatgggacca	gatgccaggt	ttctcacctg	gcttcttcct	aaggcttcca	300
gccttagaga	aagttactta	ggccttattg	gaactatggg	cagccagggc	ccctgtcacc	360
aacctgtctc	cagacctatg	gcaaggcctt	cagcaggatt	ctgccctcca	gagccacttc	420
ctctgctccc	ccagcctcca	gtgcagtatc	tcactgaatg	gtgaaagcac	agctgtctct	480
ttcccagctg	tatcttgccc	cccagcacac	ttcctggctg	agataaacat	tcagcatttt	540
ttttttttga	gatggagtct	cactctgttg	cccaggcagg	agggcagtgg	cgcgatctgg	600
gcttactgca	acctccgcct	ccctcccgga	ttcaagcaat	tctgcctcag	ccttctgagt	660
agctgggatt	acaggtgccc	accaccaagc	ccggctaatt	tttgtatttt	tagtagagac	720
agggttttac	catgttggcc	aggctggtct	cgaactcctg	gcctcaagtg	gtctgcccac	780
ctcggcctcc	caaagtgcag	ggattgcagg	tgtgggccac	gacatccggc	caacactcag	840
tatttgacta	ataaatgaat	aaatagtccg	taggttctgg	aaacttcaga	aaaccttagc	900
caaacatcct	tctgtcatga	aaattgtatc	aaagttttca	aaaataatac	atttaattct	960
acagaacaat	ttgcccgaac	aagaaaggca	gtattttttg	ggggaagata	tcaacgattc	1020
aatttttgta	aagtcaacta	ctttgcaaat	atctaggaaa	atacctgagg	gaaggagtta	1080
attgttgtgc	ctttggagga	gtggagaact	ttcagtatat	actgaacttt	caaaaatctt	1140
aacaaacgtg	tcattttgta	attaaaaatc	acaaaagagt	gggctgggta	tggtggctca	1200
cgcctgtaat	cctaccactt	tgggaggcca	aggcgagtgt	atcgcttgag	ctcaggagtt	1260
tgaaaccagc	ctgggcaata	tggtgaaatc	ccatctctac	aaaaaaattg	gcccagcatg	1320
atggtgtgtg	cctgtagtct	cagcctcccc	agtagctggg	tctacaggtg	cccgccacca	1380

cgcctggcta attttttgta tttttagtag aggcgggatt tcaccgtgtt agccaggatg   1440

gtctcaatct cctgacctcg tgatccgccc gcctcggcct cccaaagtgc tgggattgca   1500

ggcatgagcc actgcgcccg gccaattttt gtgtttttag tagagatggg gtttcaccat   1560

cttggccagg ttggtcttaa acttctgaca ttgtgatccg cccgcctcgg cctcccaaag   1620

tgctgggatt acaggtgtga gccactgcgc caggccaaga ctcagtctc   1669

<210> 482

<211> 4441

<212> DNA

<213> Homo sapiens

<400> 482

aaggtttaaa taggtgactg actcaactgc aaacagacca tgtaaaacag aagttgaagg   60

agacctgatg ccgccctctt cttattcctg atcctccctc tgcctcctca ctccctccca   120

tttattccca gcttacagtg aaggctgatc aaagcagcta tggtgccctt tgcttgtctc   180

ggagctccac ttcacaggaa gtgttgtggt ctttcatgtg aagttgcatt tgagaagaca   240

aaatttccaa gccccgttcc cacatcagtc atgtgcactg agcctgacct acaacagcac   300

tgctccctca ctggatggga cacaagtgat tccacagcct gcccttgctt tcccttcatt   360

tctgtgtctg taagtggtta tgtgttgagc cagggtaaat tcagagagat gtgtacagag   420

ttcaacaatg ggtctttaaa ccattcaaat cattggcata attataagaa ctttccacac   480

cgtggtttcc aaaacaggtc atctctaact cgtttcctgc atgcctgtgt atatacatat   540

ataaatatat acatatatat atatatacat atatatatat atatatatat ctttatacca   600

gatctatatg tacacatata atatgactta catcatcacc ctctgaccct atcacattca   660

ggattctaaa gcagggagca tcaagtttgc caaagtcaag gaaaaggaaa gtcatgcaca   720

caaaccaaag ggaacatttc ttcctgattt cataaggttg tttgttccat gcacatatat   780

ttacaaatat acacatatgt acccatattt tcccacccta agaatatcaa tttatagcct   840

taaggaaatc ggtcagccat atccctaatg ctgatataga ggcaaagaat acacaacaga   900

aaatacaaag caaaaattta gactgcagat actctctttg cttctctgga gcagggtata   960

aaagatatca acaattcaag agccaacatt gtactaatca atctaaaata aatgagttgc 1020

acgcaaatga tttcatttat tcacagcaaa ccgagcaggt cttgcttgct gtcaccgcct 1080

accctccccc atacttccaa ggcagcagag cagcttggct caaactgaca attcccaaat 1140

agaaactcct aaattgcatc tgagaatgcc catgccaact ccagctgccc tctgcacctg 1200

accagatcct gatgaactga agctgaagat cagatggtgt ttatgcagct tcccaggacc 1260

taaactgagt caggcagtga cagagcaatg atatatgcag ggactaaggg atagggttgt 1320

ttataccctc ggcagatgca gcagaatgtc ctaaagcctt gcccagaaga ttataaaaag 1380

aggcggagac tgttttatat tcaggaaaaa tgctttgtaa ggcttctaac aggtgtcacc 1440

tgacaagggc catcataatt tattttatag ggaagacatg aatcaggtgg tttggagccc 1500

tttcagcaaa acgcagctgc ctcgctgatt agacatttga caatgttaat gtacatccat 1560

tcctgggcag ggagagagtt ggcaaactcc ccaccactgc acatagcttt taaaggcctc 1620

tggaacagtg agagaagaga tgagctacaa agggagccca cccccagacc actttaacaa 1680

aaagttgacc aaagaaaaga cacctggtag agtggctggc cagatagagc tgaagaagat 1740

ggaagttgca ttaaatgctc tgcagaaatt actgcgttgg actatctaac atgggtctga 1800

tggcaggcat ttcagaacat ggcagtgtgc tttcctcccc acatctacca aacacacacc 1860

cacaccccca cacacgcg agattatgtg gatgctatgc ctccttgcac ctggacagat 1920

tgttttctg gtaagtaggt ggccctatta taggtggcag ctgtgttcca gaagaaacaa 1980

agtgaagctg ttctcagggt gatttctgga gaaaactact gtctcctgaa agcatgcata 2040

gaagtcagtg ctcactcttg ctaagccaca tattccttaa cgatccggct taatattttt 2100

aaaagatacc tcctcaaccc ctatacctgt ctcaacaata ctgtcttcaa ttattaggta 2160

aggccttgtc attaagagag gggtaggaga aaaaatagaa taataaggaa agggaagaaa 2220

ggagatatta atttcctagg attccaagaa aacaagtgtc acgtggaaat atatccctat 2280

gtagtttaaa acagtaacaa atatcaggct atgtttagcc aattacaaga gcccatatac 2340

agttttagat tttttaaaa aataatctca ggaagacctt gggtaagaaa agtaaccctg 2400

ccctattcca ccttctattt actgttagct ccctgactct gcctctgcct ctgtctttgc 2460

gtttcatttt taatctcaga gcttcatatt ttttaaatat atagcaaaca agaaaagcaa 2520

taagggaact actcacagcc agctcaactc tattacttat gattacacca tggcaatatt 2580

ccttttttcac caggagcttt ggacctgcgc aggttgtggc atgtaatcac ccggagcatg 2640

tagtcgtctg tagaaatcac aggcacactc atgtttgctc tggaaggaat ctgttttcca 2700

```
caatgactcc ccccagctaa tgtacacact ggcattttgc atgccttcct cacacatggg   2760

gcaccagcct tgctcagaac cacccaaact ccacagaggc ccttaatatg gctagggaca   2820

gatttcttaa gaaagagtaa gaagcagcta caaaggacaa gcaaatccac aagtcaggca   2880

gcattcgaga ggcaaaaatg accctgcaat tacgacaggc taggcaactg ttttcaaatt   2940

agcgtacgaa cagtgaggga ctgtgtagag caccatatta tctaagccaa agcacttcta   3000

ccagatcatt cattgacaga ctggaaaacc taataaaatc tttaaaaaca gacaaatatc   3060

taagtctgaa agaatgccat ggagtttgcc taggcttcca ccaaagattt aattccatta   3120

agagggtttg tctagcctat cacgctaatc caaaggacag tcctcttacg ggggagatcc   3180

cagcatagat gctggtgtga cccagctcaa tgattaacaa ccatcagcat caagaaaagc   3240

ctccctccaa gttaacccaa acccatccac ttaatgactt aacttttttt tttttttttt   3300

ggcaaaaagt aactgcatct gggcactctt cactctttgc cccatagttg gaagttaccg   3360

ctatgtgact ctttacctat tttcaattaa aattatcttt agattttat ttgagtcttt     3420

aaccctctta ataatttta tagttcctcc ctactaagcc tttttaagtt ctttatattg     3480

ttcttaaatg atggaacctt atgactaatg ataatcactg tctgaacagt gttgaactat   3540

actgggtgca gcatgaccat gaagctctgg tgaagtcaag gtcacaaact gcttttaagg   3600

tcattaggtc ataatctcag actcacaaag aactcaaaat tggggagaca ccactttaga   3660

ttactccaaa actctgggcc tgtacttacc cactaattta tcaagaggaa tcaatatttt   3720

tattttaaat atgaaactgg gataaatgat tggatctcca cttattaacc agtactgcag   3780

tgtgtttata tccttttgtg tggtaggttg gataggattt gtaaagctac tgattgatct   3840

catgggccag ggttcaccaa aaggatggga atttgtttct gcattcttac atattgggtt   3900

gcatattcct tcataatgga tccataagta actaaggcct tggagactaa cagttctcca   3960

aaatactcag ctaaccaaaa gaaaatacta attttttaaaa tcatgtcata aaaaacagaa   4020

aagtaaaaaa agtctgaaat cctgaataaa attattttaa ggatgaaatt acatgcataa   4080

attaagggta gataacttct tgccatttaa ttaaacaaat ccccaattct tatcagaata   4140

aaactgaagg acaatggatg ccttttgggt tttttaattt tttaatattg cactttatag   4200

tacttcataa gagacaactg tcttaattaa agccataaaa taccaataat acatatattc   4260

agggcttctg aatatagtca atcaataagc agtccatgag tcattcctgt tttgtattgt   4320

ttattgtaaa ttggagttta tctgttctat tttttattaa ctacaattat tgttctaggc   4380

aatcctaatc tacttataca ttttagatgt gtgctttaat aaaactgttt gaaaatcaaa   4440
```

g 4441

<210> 483

<211> 4355

<212> DNA

<213> Homo sapiens

<400> 483

```
gtgcattccc atgtaggcgg cctaggatgt ccttgggata tggattatgt attgtctccc    60
ctgacacatt cactgagggt agagtccatg cctgttttcc tttccttttt gtctctctct   120
cagtcccatc ccaggctcta ggcttctcac ccaaaagctc tctccctgtc tctttgtttc   180
ccccatattc tggtatgaat tctttgggta tctctcacaa actgaccctg gccccccta a   240
aacaccccac agtcaccttc aagctgtacg acacggacag aaatgggatc ctggacagct   300
cagtgagttg gggaccctgt atgctgggca agggaatatg tgttaatttg tctgcaccct   360
cctgccccaa ctcttccagg gtcttaagaa acagaagagg atggggggag aggttgagtc   420
ctctaggact aaatttgaaa gtaagtccca agctcttgac ccctcaaaga gaatgctgga   480
tacatgaatt gggtctgcct tacaaacata caaacacatt tatttacttg gcagacatac   540
ctgagaatga gaggtgtgaa tctggggtgg aacccaggaa cactgatttc tggaaaagag   600
tttggatggt ggtagtaaag gggatatggc tgtggctctt gccctttttg ctccaggaag   660
tggacaaaat tatcctacag atgatgcgag tggctgaata cctggattgg gatgtgtctg   720
agctgaggcc gattcttcag gagatgatga aagagattga ctatgatggc agtggctctg   780
tctctcaagc tgagtgggtc cgggctgggg ccaccaccgt gccactgcta gtgctgctgg   840
gtctggagat gactctgaag gacgacggac agcacatgtg gaggcccaag aggttcccca   900
gaccagtcta ctgcaatctg tgcgagtcaa gcattggtct tggcaaacag ggactgagct   960
gtaaccgtga gtaatgggag ctgggaggta ggggaagagg gtcagcccag ctatctgtgg  1020
gagcttgatg ctgtaaactt agaaaagacc taggtttgaa tcctgggctc tgccactgac  1080
tagttatgtg accttgggaa agccacatca cttctttaag ccttagtttc ctcaactgaa  1140
aatgaggtaa ttgtgagcat taaaaaagtt ggtgcaagaa aagtgcttca gatggtgcat  1200
```

gcacatacta taaaatgcaa taaaaaatat ctattatgat tactgttgct gttagacctg 1260

ggcctcccaa gcattatcca gctcagttcc tgcctggcac atggatggtg tggggcaggc 1320

atgcagtagc agctgatctt ttaggaggaa gagtaaggaa aaggcgtggg ttttggaggt 1380

gggcacttca ccccgaactt ttattctgct acaccctcaa gcaagggatc acatatctga 1440

tcctgcctca ccctcaggta agaaggaaat aggggggagag gctcagctaa gcctcccaac 1500

ttcttccttc tccctcagtc tgtaagtaca ctgttcacga ccagtgtgcc atgaaagccc 1560

tgccttgtga agtcagcacc tatgccaagt ctcggaagga cattggtgtg agtgatctca 1620

tgcctccacc cccaacatca cctacatcct ggccctggcc ctggcccttg gcccattgct 1680

gccctcagcc cctccctccc ctaggtcctg ctcagaccct gccagacaag gaactgcctt 1740

tctccccaag gtccaatcac atgtgtgggt gcgaggaggc tgtgagtccg ggcgctgcga 1800

ccgctgtcag aaaaagatcc ggatctacca cagtctgacc gggctgcatt gtgtatggtg 1860

ccacctagag atccacgatg actgcctgca agcggtgggc catgagtgtg actgtgggct 1920

gctccgggat cacatcctgc ctccatcttc catctatccc agtgtcctgg cctctggacc 1980

ggatcgtaaa aatagcaaaa caagccagaa gaccatggat gatttaaatt tgagcacctc 2040

tgaggctctg cggattgacc ctgttcctaa cacccaccca cttctcgtct ttgtcaatcc 2100

taagagtggc gggaagcagg ggcagagggt gctctggaag ttccagtata tattaaaccc 2160

tcgacaggtg ttcaacctcc taaaggatgg tcctgagata gggctccgat tattcaagga 2220

tgttcctgat agccggattt tggtgtgtgg tggagacggc acagtaggct ggattctaga 2280

gaccattgac aaagctaact tgccagtttt gcctcctgtt gctgtgttgc ccctgggtac 2340

tggaaatgat ctggctcgat gcctaagatg gggaggagat ggaatctcgc tctgttgccc 2400

atgctggagt gcagtggtgc catctcagct cactgcagcc tctgcctccc aggttcaagt 2460

gattctcctg tctcagcctc ctgaatagct ggaaatacag gttatgaagg acagaatctg 2520

gcaaagatcc tcaaggattt agagatgagt aaagtggtac atatggatcg atggtctgtg 2580

gaggtgatac ctcaacaaac tgaagaaaaa agtgacccag tcccctttca aatcatcaat 2640

aactacttct ctattggcgt ggtcagtgga atggggcctg gggagaaggg agaaaggggg 2700

ggccaagcag tcagaggctg gaggagagca gaaaaggagg gggaggttaa gtgacctgtg 2760

acacagggaa attgggagtg cagtacagtg ctgagttgca agggaagatc ttgggacatg 2820

ctgtggggag cagcatgggg acttgggaaa gaggggagac cgggagggag agattgagct 2880

ctgtactgac cttcatgtcc cgaactctcc aggatgcctc tattgctcat cgattccaca 2940

```
tcatgcgaga gaaatatccg gagaagttca acagcagaat gaagaacaag ctatggtact 3000

tcgaatttgc cacatctgaa tccatcttct caacatgcaa aaagctggag gagtctttga 3060

cagttgaggt gtgtgtaata agacttaacc ctacatcctt ttcagcttct taatagccaa 3120

gtttctccct ccatggcacc cttaggaact tcccatattc ttgaacctat gcttctttaa 3180

cctcccagct ctcctacccc aattctccaa gtcctcaaga tacactagtc cctatttcca 3240

ttccttgcac acctccaaat cctgccttct ccagtttgtc atctggtgga gggagcgatc 3300

acatctatga tcatgccatg aggtgaggat ctgtaccctc cctaactggg actgtgcccc 3360

ctcctctcag atctgtggga aaccgctgga tctgagcaac ctgtccctag aaggcatcgc 3420

agtgctaaac atccctagca tgcatggtgg ctccaacctc tggggtgata ccaggagacc 3480

ccatggggat atctatggga tcaaccaggc cttaggtgct acagctaaag tcatcaccga 3540

ccctgatatc ctgaaaacct gtgtaccaga cctaagtgac aagagactgg aagtggttgg 3600

gctggagggt gcaattgaga tgggccaaat ctataccaag ctcaagaatg ctggacgtcg 3660

gctggccaag tgctctgaga tcaccttcca caccacaaag acccttccca tgcaaattga 3720

cggagaaccc tggatgcaga cgccctgtac agtgagtatt gacgatccca gccaaaaatt 3780

aaacccttgg gctccatgga tcctaaatcc ccattccaca gcttctttac acccttctga 3840

tgcctgaact tcccctgcac atcattcatc ctaaaccctg atttctcagc ccctggtttc 3900

cctatcgtgg cctctctagg aacctagcaa cccaccccaa accccacaga tttccctcta 3960

aatctctgaa gccacagccc caaagtatca ggtcctgcct ctgaatgtgc tcccttccct 4020

tccagatcaa gatcacccac aagaaccaga tgcccatgct catgggccca ccccccgct 4080

ccaccaattt ctttggcttc ttgagctaag ggggacaccc ttggcctcca agccagcctt 4140

gaacccacct ccctgtccct ggactctact cccgaggctc tgtacattgc tgccacatac 4200

tcctgccagc ttgggggagt gttccttcac cctcacagta tttattatcc tgcaccacct 4260

cactgttccc catgcgcaca cacatacaca caccccaaaa cacatacatt gaaagtgcct 4320

catctgaata aaatgacttg tgtttcccct ttggg                               4355
```

<210> 484

<211> 5675

<212> DNA

●

<213> Homo sapiens

<400> 484

ccggtttaat	ccacaccgct	gcgtctgtcc	tccgtcctgg	ggctggtctt	ctccctcatc	60
tctgccggag	gcttttaatc	tcttctgcca	ctcttctgga	aagtcaccag	caatgcacgc	120
tgctggctct	gcaggagggt	caggggggacg	gccctcggcc	tgtgcgtggt	gccagccacc	180
ctccctgcct	ccctctgcgt	gcgtcccgtg	tccctgcctg	gggtgtgtgt	gtcgagtgac	240
taacgtctct	ctcctgcctc	tccctcctgt	ctgtccgtgt	ctagctctac	ctggtgcgca	300
ccatggccga	gtccttgggc	tctgccgagc	tgctcaggca	gctcaagtct	ctgggcatgg	360
agaggctctt	gcatgcggtt	aacacgtttc	tgaggcagtc	gtgcacctac	ctaccccttt	420
taacctttgg	tggtaagaca	tcatttgttt	ctcttgacgt	ttatggcacg	gaggcgaact	480
gctccgctac	aagttgttct	ttccccaaag	cagcagcaac	gtggccgcgt	agacaggcac	540
ccggacccct	cggggagctg	gtgcggggcc	ctcccgacca	gggcgtagcg	gagcagtcct	600
tctctcatgg	gctttttgag	tttggcataa	ctaatgtacc	atgtatattt	tctcccccac	660
aaatgtttcc	ttggataatc	cagctttaca	tggtgagaac	catgctagag	tccctcattg	720
cagacaaaag	tggttccaag	aaaaccttga	gaagtaacct	tgaggggccc	accatattgg	780
acatagaaaa	atttcatcga	gagtcattct	tctacactca	cttgataaat	ttcagtgaaa	840
cgctgcagca	gtgctgtgac	ctttcgcagc	tgtggttccg	agagttcttc	ctggagctga	900
ccatgggcag	gaggatccag	ttccccattg	agatgtcgat	gccctggatc	ctgacggacc	960
acatcctgga	gaccaaggag	gcatcgatga	tggagtacgt	gctctactcc	ctggacctgt	1020
acaatgacag	cgcccactac	gcgctcacca	ggttcaacaa	gcagttcctg	tacgacgaaa	1080
ttgaggccga	ggtgaatcta	tgttttgacc	aatttgttta	caagctagca	gaccagatat	1140
ttgcctatta	taaggttatg	gcaggaagtt	tgcttcttga	taaacggtta	cgatcagaat	1200
gcaagaatca	gggagccacg	atccacctcc	cgccgtctaa	ccgctacgag	acgctgctga	1260
agcagaggca	tgtgcagctc	ctcggcagat	caatagacct	caatcgtctg	atcacccagc	1320
gcgtctcagc	agccatgtat	aagtccctag	aactggcgat	tggacgattt	gaaagtgaag	1380
atttgacctc	catagttgag	ctggatggcc	tgttggaaat	caaccgcatg	acccacaagc	1440
tgctgagccg	gtacctgacg	ctggacagct	tcgacgccat	gttccgggag	gccaaccaca	1500
acgtgtcagc	gccctacggg	aggatcaccc	tgcacgtctt	ctgggagctc	aactatgact	1560

```
tcctgcccaa ctactgctac aacggctcta ccaaccggtt tgttcggaca gtgttaccat  1620

tttctcagga atttcaaaga gataagcagc ctaatgcaca gcctcagtat ctgcatggat  1680

ccaaggcttt gaacttggcc cactccagca tttacggcag ctaccggaac ttcgtgggac  1740

ctccacactt tcaagtcatc tgccggcttc tcggctacca gggtatcgcc gtggtcaggg  1800

aggagctgct gaaggtcgtc aagagcctgc tgcaaggcac aatcctgcag tacgtgaaga  1860

cgctgatgga ggtgatgccc aagatctgcc gcctgccccg gcacgagtac ggctctcctg  1920

gtatcctgga gttcttccac caccagctga aggacatcgt ggagtacgca gagctgaaga  1980

cggtgtgctt ccagaacctg cgggaggtgg ggaacgccat cctcttctgc ctgctcatcg  2040

agcagagcct gtctttagaa gaagtgtgtg acctgctgca cgcggctcct ttccagaaca  2100

tcttgccacg agtccatgtg aaagaggggg agagacttga tgccaaaatg aaaagactag  2160

aatcaaagta cgccccgctg catcttgtcc cactgattga aagactgggg acccctcagc  2220

aaattgccat cgcaagagag ggggacctgc tgacaaagga gcgcctctgc tgcggcctgt  2280

ccatgtttga ggtcatcctg acacggatcc ggagctttct ggatgacccc atctggcgcg  2340

ggcctctgcc cagcaatggg gtcatgcatg tggacgagtg tgtggagttt cacagactgt  2400

ggagtgccat gcagtttgtc tactgcattc ccgtggggac acacgagttc acagtcgagc  2460

agtgctttgg tgatgggcta cactgggctg ctgtatgat catcgtactt cttgggcagc  2520

agcggcgttt tgctgtgctg gatttctgct accatctact aaagtccag aaacatgatg  2580

gcaaagatga gattattaaa aatgtgcctt tgaagaagat ggtggagaga attcgcaagt  2640

tccagattct caatgatgag atcatcacca tcctggataa gtacctgaag tcaggcgacg  2700

gggagggcac gccagtggag catgtgcgct gcttccagcc gcccatccac cagtccctcg  2760

ccagcagctg agggcacgcg ctgcactccg taactcaaca tggcatgcct ttctctccgt  2820

aaactattta gtgagatttt tagggactat ttttcagtat ctctgtacct gttaaagggg  2880

gtgctttтcg atctaaaaac ttaattttat aaaattgact tattttcta gactaaaatt  2940

gtatatgctt ttggtaatta ggaactcttg agaatattgg ctgctgattg ttgccatcac  3000

gttcctacaa aattgttttt ctatgggatg ttctggcagc tgtgtcataa aatgctgctg  3060

ggttcattca ttcattccat aagaaactta ataccagcaa atgcattaaa tcccttgcca  3120

gttaccatta actgtaacta tttagctttt gtttagggat ctttctgatg gtctttatg  3180

agcaatctta gttctaagtc attgttccca tccctttttt gtgtgtttca gaaaatagtg  3240

aacttgattc ccctgcttcc actaaatcca gttgtgacaa aatctaacgt gacatcagat  3300
```

cgaaaggtta tagaaataaa actaatgaga tctatttgtg ttcatttatt tactctaacc 3360

ctgtgctgcc tggcttggca aggaactcta acctgaactc acataccagg ccagctggga 3420

tggaggtcac ctctaaggct gaggtgggat gggaccgtga caccatccca tataccgctc 3480

acctcagcac aggtttagct ttatatttag ggttccgcag gcaaatgagg tgtaaaacgg 3540

ccgtgttggc tgctccaatc tggatatgaa gaggctactc agtgcctctc tgttacctgt 3600

gcccatgacc tggaggaagc cagcaatgtg ggaggagatc agtcaggccc agtgggtgct 3660

gcacaaaggg accgggagca ccgagtccag ccttcagctg tccccgatcc acagggctca 3720

catggctgga gctggttcac atgatctgtc agaatgaaaa acaatcggtc tagactacca 3780

gtagagtcac gaacatgttt gagaaactaa agccatattt taaaaagtac taaggcaatg 3840

aggttctgaa aatcctaact gaatggaaaa agatgctatg cctgtttatt gtagatgaat 3900

actacagata aacacaagtc cagcatgatt aactgaactc actttatatt gtagcctggc 3960

agtcatttta cattatttgg agtattgcaa ccttcaccaa ttttaaaatt ttctatggat 4020

gccaagttgc cataaaaagc aggcctcgcc tacttttccg gaggcctttg gaaactgtcc 4080

agaagcatat gatgcacggc acagaaaagt agtaagtgta cgaaccatcc tgttacactg 4140

ccaaactcac tcaagtgaca tgaagcctaa caaacaatta ttctttcttt ataaaaagtt 4200

ccctaaaaat gcttttggta atgtgaatta ataaccctgg ggccagcatt ctgctgcaga 4260

tttagaggtg gtagctgtgc ttatcttaga aactacagaa taggatgaaa aattatggta 4320

aaacttaatc aattaccaag ttttataagg cttaattata taccaaatat gtaatacctt 4380

aggtataaga caatctcaag tgctacaaaa tgttaaataa gaatttatta tttattaacc 4440

tatgcatgtt caaatgagtc tctgtcctca aggggggagaa aactggttct tttatgtaca 4500

aagcacagat gtaggtacag tatataaaca gatacgtagt acatctgtag tattaaaatg 4560

gcatgggagg aggcagttag aaaaaacatc taaaacagct ccttagaagg ccaataatac 4620

agttggaaaa aagggagttt ccacgcagcc agtggtgagc tgcatgggat accagcacca 4680

ttggcagggg aggccctcgg ggagtgatgg cttggcgctg gcgcaccact gggtaacctc 4740

caggcaggag ccacaggctg gaacaggcga acactttctt cccatcacct aggtggaaat 4800

taattctgcc aatacttttt tttaaaggcc agtcaatggt tatgagtgga taggttcaaa 4860

gctgaatgga gttcattaga ccttttttat tattctacct tttctgcata tgtttgcagt 4920

tttccatcaa cttcttcata aacaaacaaa cattttctag aaaccaaaat atgtagtggc 4980

ccaaaggagc tcttaagcaa agtacttggt acaaagagac catattctat aaacatgtta 5040

agtttgttct aagcattcag acttttagaa taagaacttc atttcaactt tttattataa 5100

catgagctaa actttaagaa acaaccctag tcttctattt cccagagctg ttcaaagtct 5160

aaatgacaat ataactcatt atgaaaatat actgaaaagt acaagagctg atgtaaaacg 5220

gtaatcaagg ttccaggcat catgggatta gggtaactga agaataaacc cagccaggct 5280

gcaacagcag gcaggatgtg ctggcttgat gaggtgctaa ggccatcgaa tgctcagagg 5340

aagccggatt cacggtgatc atctcaacct gagaaatcgt tccttggggt gatttctgcc 5400

cttttttttg ttttgtaaga aagaggttcc ttcattcagt aacttagttt tcccttaata 5460

aatatttcaa aaataaaacc aatcatcatc aaacaaacag gagccacttt tgtaggtaag 5520

gtaaatcaca ggataatgta ttgggataac tctgtttttt taaaataaaa aagccttaca 5580

tggtcaggga ttgatggagt ggggatgaca aatgcacatt tcagactttc atcaccaatg 5640

aaaaaataaa gcattttcat agacttaaaa ctgtc 5675

<210> 485

<211> 4493

<212> DNA

<213> Homo sapiens

<400> 485

accagactgg ccgcctctcg gcgagcgcgc cactctcccg tcgccgctga cccgcgcgcg 60

gccgccgaag cctcccgcg gggacattca ttcttgcccc ttgcctgtcg ccgggccggg 120

cgtacgggcc gcgttgtcgg gggttttgtc ccctttttcc tctttttttt ttccttctcc 180

cccccccct tttttttctt ttgcttttt tttcctttct gtttttgttg ttgttcttgc 240

ctatgttcgg gaaaccagac aaaatggacg ttcgatgcca ctcggacgcc gaggctgccc 300

gggtctcgaa gaacgcgcac aaggagagtc gggagagcaa gggcgcggag gggaacctcc 360

cagccgcctt cctcaaggag ccgcagggcg ccttctcagc gtcgggcgct gctgaggatt 420

gtaacaaaag taaatccaat tccgcagcgg acccggatta ctgccgccgg atcctggtcc 480

gagatgccaa ggggtccatc cgagagatca tcctgcccaa gggcctggac ttggaccggc 540

ctaagaggac gcgcacgtcc ttcaccgcgg agcagctcta tcggctggag atggagttcc 600

agcgctgcca gtacgtggtg ggccgcgaga ggaccgagct cgcccggcag cttaacctct 660

ccgagaccca ggcaaatagt gaagaaaata atgaacgatt caaacgcggg ataaaaaaac 720

aaaagaagaa aaggaagaaa gagccagcaa atgatgagtc tcggcgtggg gactccgggg 780

gcagagggtg gcagccccta tagtgcgggg ccctgcgact ggtaccgtga gcgcctggga 840

tgaggtttgg gcggatttcg ggtttccgga gaggcagaga cgcctggcta cgacgatttg 900

ttccacttcc ttgagtgttt cgctctcgat ttctctatct gtccctctga ggtcggcccc 960

tcagaccctc ctccttaatt tcccactgcg taattcttag tttatttagg aactcatctc 1020

tgggcactat aaagtctctg cctcctaatg ctaggtttct agagtcttcc agctgcatct 1080

tcatgccggc agcattttgg attttgtgca atcatgggcc cagaataggc aaggttttat 1140

tttcttctga cttagaatat aagtctcgcc atcgtcaaag agagactttg aaggagcagg 1200

agactgaaat cgatattaat tcctgcaaag agacctcctc accctggtgc ttatgcggtg 1260

gtgacgggtg tagacgttgc aaacaaatct tgggaagcga ggagggccgg ggaggacact 1320

tccggacacg ctcttctaaa gcgtgtgcag cacggggcga agtccgcgct gcgggggcag 1380

cggccccggc tccttcttgt agcgcctgca cacctgggtg ttgcagggac ccgcagctcc 1440

cgtgcggcac cggccctagc caggccttac tgcccctact cgtgtactgt gcctgaagct 1500

gaagttggag gcatccaaaa taaggcgggg cacagtgtgg gcggcggagt ccctgagcct 1560

tgagctccgc tttttgctga gatcacagca gccgcccaca gacagttcac ttttatttct 1620

caaagttgct gcagatccct cagcttggct tctcttggct cttcccctcc ctgtccgcct 1680

ctccttactt tctcttgctt gaaactgctt ttccttttct actcttttct tccgcgctcc 1740

tgtcccgtaa acgcctgcgc ttcctttaag gagttctctc tctgtggtgt gggctcccct 1800

ctcgttcccc ctgtctccct cctccattat ttcttccttc caggtctctc tctctctttt 1860

ggttttctgg ttttttttctc ctgctcaagg ggtcccaaag gccaaggcag tgggtggctc 1920

tcgctgcagc ttcaaggctg gtggctgggg ccctccaggg gtgagaagga agggagaagg 1980

tggcataact ttttggaaca aaagaaaaca caaaatccta gcttgggatt cccaacaaat 2040

tcagcctcct ctcccagggg cctcagcctg ggaagtcacc aagcagatcc ctccttccag 2100

cttcctgctc tttctccttt ttgctttctt acccctgaaa gagggaagga caagtcacct 2160

cataacttct gctctcacct cccttccctc cctggctttg ggaagagctg ctgagctctt 2220

tgcctgccac tcagggagtg caattgttct tgaagagcct cttctgcata gaaaaagaat 2280

tgcaatttta atttaaaaac atttatagaa aattcattta attttagtga ctatcttctt 2340

```
ttccctcctt ccccaagggc ctccagtaag ctgccttggt ccctggaggc ttctggcttc  2400

caactggaga ctcacaggcc ttggaggagg aggcaggtac cctctatgcc aatagctggg  2460

cctgcctggg gaaaggtgga aggagaaaca gctgcaggag gggggagctg aaaggaatct  2520

gatgctcagg cctgcacaaa gcaaccgcca aattgtttca gagcagaaaa gaaaaaggga  2580

gaaaacctct tagcaaagcc ctgtgagttt gggggtcagg ttcaagaaag atgtgggaag  2640

tcacttggag agctaaacgg gacacatgct cctatccaca cttgcagttg gtctaacctt  2700

cagccagaat gtattcataa gtagcatttg gcaacccttt atagtttaca aatagcattt  2760

tacatacacc attctactat tcctcatggt ggctttggga ggtccagctc cgttttaaag  2820

actcacacag gactgaagca ataacttgc tcaaagccac atagctgctc agaacccaag  2880

attgtaagct ccccctaggg ccagaggcct ctttctttca gtttttttct ttcgtcccc   2940

tttgaccct ctttccttct tccctttctc ccctccttcc tcctttcctt cttttttgtgc 3000

ccacagtgtc tggatcatgg tacctgaatt ctttagccta tttgcaccca catctgctaa  3060

tgtccatatc tagccatcta ttacaccagc tgctgaggat ttacttggtg ccctcatcaa  3120

gaagtttgaa tttctccctc cttccttttt ttttcctgcc actgtcccaa ctctttccct  3180

ctacgtctct ctagaatgac atctttaaac cccttacact ctttggtctt acacatcctt  3240

aaaaatgatt atttataaat tgaattataa tatccatgag gtaaacactc atagggtaaa  3300

gtacacaaag cttaactata caagttgatg atttacacac acacacacac acacacac    3360

acacaccct tcttgaatgg ctccaaggat acccttttaa cttcttccct tcagccacat   3420

aagccatatg atgacacaca gtgtctttct cctgtttgaa aagaaattgt gtcatattgg  3480

tgtgctgttc ttgcatagaa agccttttt aagaagtctt tttaagattt cttgaaggat  3540

tttagaaatc atatatctct tctaacccccc tgaaatcctg agtttaagtg gcttgattaa 3600

atggctgatc aaaacttaaa aacacactag gtcaatgttt ttcaagatac aactgaggac  3660

cagctgcttc agaatcatct ggggactggc taaaattcca ggttcctaag ccctagtccc  3720

atctgatgaa tcagaaacta ggttgggggct taggaacgtg cattttaaac acttttccaa 3780

agtgattctt atccagacta atatttgaga agtactgtat taaatggcaa actcccaaaa  3840

cactgcagcc tcctgcatct ggcccagggc ctggcatttg gtaggaatac aatgaatgtt  3900

tgttaaacaa attaatccac agtttctgac acagtttaga atttcttgga ccacattatg  3960

ctattgtaat ttaacaccat ttctacgtcg ggaaatcttt acatttcagt ctttttcatt  4020

ttcatggagg tttcattttta atggagcagg agagaaaaga gagatctact ttggtggttt  4080
```

ctcaggtctc agggaaggtc ttttataaac tcaatgggga ccaccttcct ggagaggctg 4140

ctcccttaca gacctggtag tttgggggaaa ggaggaggag agcccttcag gtttgctgaa 4200

aagcattcag atgcacaccc ttcttggttg gaactgaaag cttctgtttg aagagacatg 4260

agttctggaa ggagcaaggc caccaggtcc agagaacctg gcatgcaatg gacatggaag 4320

ctgaaaatta cttgggtatt ctctgatttc tagctaatat gaaaataatt ttctttctag 4380

aaacacattt gcctatcttc ttaccctgaa acagaaaata aatattgtgc tttatgtggt 4440

agtgttgtac ccattcttaa aaataaatca catcatatat atgtgtaaaa tat 4493

<210> 486

<211> 3449

<212> DNA

<213> Homo sapiens

<400> 486

ccaccagaca cacagacacg cacacacagc tctccatggg ctgccctgcg tgtgcctgag 60

aagggtctgg gatagagacc taaaattcag tcagcagatc tctgtcaagg gcctgccatg 120

ggccagccac tctgatgagg gctttcatca acatgattgc atttaaacct cacagccacc 180

ccatgaggta ggtagcatta cccctagttt accattaatg cagtcaatcc caacaggtga 240

cttgcccaag tcacatatct atttaagtaa cagggccagc ttccgaatcc acatgtgtgg 300

caccaagtct ggtattcttt cccccaggct gcattgttta tctctcttgc aaaatgctgt 360

tttcttccag gggctgggaa agggctactg gggaggtgag acatggagat gggggtatag 420

gaggccagga gcagggccct aggctgaggt gctctgctta cccctcagaa tggcctttgt 480

gctgcaccag ctgggcccc cccacagcca cgggtctagg ggagcagagt atgcaccgct 540

ggaggagggg cctgaagagc ccctgcccct ggggaacacc agcgtccggg cggcatttgt 600

gcacgtgctg ggggacctcc tgcagagctt tggggtactg gctgcctcca tcctcatcta 660

cttcaagcct caatacaagg cagccgaccc catcagcacc ttcctcttct ccatctgtgc 720

ccttggatcc accgctccca ccctccgaga cgttcttcga atcctcatgg aaggtacccc 780

ccgcaatgtg gggttcgaac ctgtgcggga tacgctgttg tcggtgccag gagtccgggc 840

aacccatgag ctgcacctgt gggcccttac gctcacttac catgttgcct ctgcacacct　900

ggccatcggt gagtcacact ggccccagct agttactacc tggaacatac cccaccccaa　960

acatgggacc atagcttgag ttactggaat tgtttcagtc tttttttgatc tgtctctgtt　1020

tctctgtgtc tctctctctc acatagacac atacacacac acacacatgc acgtgcgctc　1080

gtgcatgttg gagacaagga gtctccatcc actggatgca gtgttctggg ggcagtttca　1140

ccctctttga agtagcacag ggaaccaaca acccttaaa agatcattag tacctacagg　1200

tctagtgatg gggcacagtt aggtaaatta cagcacctcc accctgaggt atcacataac　1260

tgttaaaaat gatgcttgtg aagactgtac agcaactatg aaaaatgttt atggtataat　1320

gctgagaaaa aagctgaata taaaattgca tctacattat gattcaacta ttaaaaatat　1380

atatggtgag tcatgagctg acaaaggatt tttgagtttc ttccagatgc aagaagcaat　1440

cagagtcatg caatttgtat gccaaaaata ttataatttg tgggatattt gatggaaact　1500

ctagagggac aatgagacag atatttaaca actggattgt cctgggaaat cgggtggtat　1560

ggctgctgaa atgttgagct gtatgttgac acttaatgac aggagagaat aggagactgg　1620

aaagagttta gtgtgttagc atggttgatt ggggtgagtc tctccaacat ttgatttgac　1680

acttttatgc tgttcataca atacagaaag aaaagcaggc ttccattcac gcctggcttt　1740

aatgctgtgc agccccttc cctgtcctta tctcagtccc tgcctgttct ttctcccccg　1800

ggatggatgc cgcctcttat cactctccca cagactccac cgctgaccct gaagccgtcc　1860

tggctgaagc ctcatcccgg ctctactccc ggtttggatt ctccagctgc accctgcagg　1920

tcgagcagta tcagccggag atggcccagt gcctgcgctg ccaggaaccc ccccaagcct　1980

gagccatggc cctgccctca ccccactgcc aggccgaggc tcagccccag actctcagca　2040

tctgctgccc tgatcacaga gacgggaccg agccaggtcc ataccccttc ctctctccct　2100

cctaccacct gccagtttcc ccagcctcag ccccagcccc agccccagtg ggcaagacca　2160

aagtgtggcg gggagtgggg tgggagtcag gggaatagat gtgactagtt caggggcggg　2220

gactcccagg cctcagtgtg gcagggtgtg ttgaaggcct gtggtgccat ctccccatgg　2280

ttcatgtgga gccacgaaca tcctttccct gcagtccatt tgtctgtgtg gcaggctggc　2340

tggctggggg catctgcctg tctatgtgct gttggtgtgc ctatgcctgg gggaggtcag　2400

taggggcccc ctccccacat ggccctcgct ctgtctatgc aggggcccca aagcccgcac　2460

tttgtccgtg tgtcttagcc ctgtggtttt gtctgtgtgt gtgtgtgtgt gtgtgtgtgt　2520

gtgtgtgtgt gtgtgttctt ggtgctgtgg cctgtgtgtc tctgtgccta tgtggctgtg　2580

ctatggtttc tatgagtctg ctccatccat gtgtctgttt gggggtctat ctctccatcc　2640

ctctgttggt gctgtgccct tggctatccc tgaaagaggg aggactccgc tgcagctcca　2700

ccaataaact tgtgtctcac tgcatctttc agcctgtgtg ctgactcctc aggaggggga　2760

agtcaaatag gtcacttgag aacaacagaa tccctcctgt cccttcccag cctctggagt　2820

gacctcccac agacctcctg tcccttccca gcccctccac cctcagatgg agggtaaaag　2880

ccaccagtct ctttactccc cttcccctgg ctcacagcat gcctgggtcc ttggctcagg　2940

gacagtccca tgtgccctgg gcttggttgc aggagaatgc tggaaggtaa ggagccaagg　3000

aatccctggg agtcagtcgt tctcagaggt ccctgcatgc cagtgggcct caggctggct　3060

ggagggaggc tgggtccctt tgagggagaa tggctagacc atagcactga tgtgggcttg　3120

gttctcaggc catctaaggt gtccagcggt agggacccct caaccctgat agcagccaac　3180

cctgagtcca ggtttaggct gtgaacacca aggacctctt ttacacctat tccccctttg　3240

tcttaagaac tgcatatttt gacacattaa gtcttaaaat caggctcatt aagggattgt　3300

tgattttctc tttaaaaaaa atcaaactca agctggacat agtggcctgt gcctgtaatc　3360

tcagcccttt ggaggctgag gcaggaggat tgtttgagcc caggagttca agaccagcct　3420

gggcaaccta gggaaacccc tgtctctac　3449

<210> 487

<211> 4200

<212> DNA

<213> Homo sapiens

<400> 487

gttttgaaag acaagtttat tactcagaca gcccctgata tcagaaggaa gctagagaaa　60

caggccatgg gattagatag caccttacaa aacctcctga aggtagccac ctcggtcttt　120

tataataggg accaggagga ggcccagggg aaggagagga aacacaagaa aaaggcagag　180

actctggtgg ccactttgta taaaacccag tatccccaag gtacacctgc tagttgctac　240

caatgtggca aactagggca cttcaaaagg gactgcccag gcagcaagaa gaagccacct　300

caaccctgtc cagtatacaa tggggaccac tggaaggcag actgtcctgg gaagcatagg　360

```
tcactgagtc cagagccagt ctcacaaatg gtccagcagg actgatgggt cctggggctc    420

aactccctgg ctccagtggc tcagactgct gttactaccc gggagcacca ggtgattctg    480

gagttcgaag ggaggaaggt agacttcttt ctggacactg agccaggct tctgtttttcc    540

tctccaattc aggccttcgt tcctcccata gcacaaccat gatgggcatc tcaggaaaga    600

ctttaacttg atattttttct caacctatta gttgcagtca gagggaccta ctgtttacac    660

aggcctttttt agtcatgcct gaaagtccca ctcctttatt agatagagat attccagcac    720

gtatggggggc caccatcctt atggctccag gacaaactcc acctcccctt agtggaaacc    780

agtattaacc cagaggtttg ggcaactcag ggaagaagtg gccggactat aaccactata    840

ccagtctgga tccacctcaa ggatcccact ttttttccta accagagaca ataccccctg    900

aagccagaaa gtagaaaagg gctagacgcc agcattgata acctaaaggc acaaggcctc    960

cttaggcctt gcagtagccc ttgaaacacc ccaatattag gggtgcaaaa atccaatggg    1020

gaagggagac tagttcagga cctctgcctt attcatgagg ctgtgattac gattcatcca    1080

gtagatccca gtccctatac tttgctaact caaataccca agggaactaa atggttcaca    1140

gttctgggcc taaaggatgc cttttttctgt atacctttat accctgactc ccaatacttg    1200

tttacctttg aagacccctc caatcaaacc acccagttaa cctggactgt actgcctcag    1260

ggatttagag atagccccca cctatttggg caagtattgt caagagatct cttcgaattc    1320

ttccattctc aggttaaagt tttacaatat gtagatgaca ttctcctctg tgccccaact    1380

gaggaagttt cttgagacgg cactgaggct ctccttaatt tcctagctgg aaagggatat    1440

aaggcttcaa aatctaaggc tcagctctat cgtcttgtca gaagggaaca agagcactag    1500

gcgaggagag gattaatccc atttcctccc ttcctctccc cagaaccctc aagcagctga    1560

gggatgcttg ggcattacag gtttttgtag gttatagata cccaggtatg ataaaatagg    1620

ttgcccttta tatcacctta taaaagaaat tcaagtggct aaaactcact tcctgacctg    1680

ggaacctgaa ggtcaaaagg ccattaatca gttaaaacaa gccttgctta aagcaccagc    1740

ccccagtctt tctgtaggga agtcctttaa tctttatgta tcataaagga aaggaatgac    1800

cctgggagtt ttaattcaag ttcaaggccc agctcaacag ccagtagatt acttaagtag    1860

agagcttgac ttggaggcta aaggatggcc agcttgcctc tgagcagtta cagtagtggc    1920

cctgctagtc ccagaggcca ccaagttaac cctggggaat aacctgttta tgcctcacat    1980

aaataatgtg gcaggcttgt tgtcctctaa agcgagtctc tggctaacag acagctgcct    2040

cctcaagtat cagactttgc tgctagagga atctgcagtc cagttaaaaa cctgaccttg    2100
```

cctgatccca gacactttcc tcccagagga aactggagaa actgaacata attgtgaaca   2160

gactgtagta caacctatgc cgctagggag gatctcaaag aaattcccct agaaaatcca   2220

gactggaccc actttatggg tgggagctct tttgtaggac agggagtctg aaaagtggga   2280

tatgcagtag tcaccctaaa taacattgaa aatgtgcctc tctcaccagg cacacacact   2340

caatcagttg agctgatccc tctcacaaga gcacttgaac taagcaaagg aaagacagct   2400

aacatttata ctgactccaa gtgtaccttt ctagttctcc ttgcccatgc tgccatctga   2460

aaggaaaggc acttcctcac cgctaatggg tcttgcatta aataccatca agacatcaac   2520

aggctattat cctcagtgtt cctcccatga gaattagtgg tcagacattg cagagggcat   2580

cagaagcggg tagatgaaat agccaaagga aacaggctag cagaccaaag agctaagtca   2640

gcagtaagaa ggccccaagg tcccaaaaca cttgaggccc ctctgatttg ggagggctac   2700

ataagggaaa taaagcctca gtattcccct acagagatag aatgggccac ctctcgaggt   2760

atactttca accctcagga tggttacaat cagaagattg caaagtacgc ttgccagcct   2820

ccagccaatg gaagattctt aaaatcctcc actgagcctt tcacttagga aagcataaga   2880

catcagtgca tccaaagatt gttctcagga gaaaatctac taaaaatggt caaataggtt   2940

gttaatactc gtgaaaccct cttaaaaata atccctttaa cagatgactt cttccccacc   3000

acaatcaaag gatgggaagt tactcagggg aggactggca gatagacttc acccatatgc   3060

ccaaaataaa tggcattcaa tgtctttggg tgtgggtgca taccttcatt aactgggtat   3120

aggcattccc atgcccaaca gaaaaggcct ctgaggtggt gagaatacta attagttaaa   3180

taattcctca ctttgggctc cctaagtact tccaaaacaa caatggtccc tcatttaaag   3240

aagcctctac ccagtagggc cgagtctgct aggacttttt attgggtttg gtaatacgtc   3300

acacccttta gcctctactg tgtcagccat gtcccattta tacaagacaa attgctgggt   3360

ctgtcctgag cggtttggtc agttcagtaa cactaaggaa cctcttgatg acttggtatt   3420

tactgtctta gcattccctt tgttagcttt acctttagcc attaaagact tgtcaggcat   3480

aaatggaaca tggtatggga acactttcaa ctgagtaact aactcctccc aggaaagcat   3540

ttcctccctg gtgccagaaa acactttccc caaagataag cctcacaccc tcaggctagg   3600

aaaagttggc cgggtaatag caaatgcctc ctcctgtttt aaaagcagag gaaaaggacc   3660

atacctggga gatctcaaat attataacac catacttgta attgctgaaa gctcggaagt   3720

ttggagaaaa agacataaga aggatgatct aagaaaattg gaagccatat ggaggggagg   3780

ctttcagaat tcagcgtctc ctcctggttg aaagtcctgc tgggaatggc aggctctggg   3840

taaccaccct gacacatggc actataatgt aaaaaacaac acataggcct tcccagacat   3900

gcaccctcat gggattccag acccccctgta tgatgcttag tagtagtggc ctacaaatct   3960

gtgggtgaac agaacaggag acttctggac tgacagcccc tgtcacaagg gggcattatc   4020

tgagatattg gccagggcat atcgtgtccc tggtcttttg aaactccatt tgtcggccag   4080

gtgtggtggc ttacgactgt aatcccagca ctttgggagg ctgaggcagg tagatgatga   4140

ggtcaggagt tcaagactag cctggacaat atggtgaaac cccgtctgta ctaataatac   4200

<210> 488

<211> 4648

<212> DNA

<213> Homo sapiens

<400> 488

tttccctaat gcttaatttc tacacaaggc tctggtaaaa agtaaaaatg tctaatattt   60

taacatcaca gtttacagag tttatatgct tcatttcgtt caccctcatc tcagtatgtg   120

aatgtctcta aaatctacaa ctctagttcc aggaaatctt gctgttcttt ttattttat   180

tttttatttt ttgtacagac ggggtctcac tatgttgccc aggctggtct tgaactactg   240

agctcaaaat atcctcctgc cttggcttcc caaagtgctg ggattacagg catgagccac   300

tgtgcctgga caaatcttgc tgttcttaat agtcactctt tttttatttt tattttttg   360

agacagggtc tcactctgtc acccagactg gaatgcagtg gtgtgatcat ggctcaatgc   420

agcttcaact tcctgagctc aaacgatcct cctgcctcag cctcctaagt agctgggact   480

ataggtgcac actatcacac tcagctaatt tttattttta tttttgtag agatggagtc   540

tcactgtgtg gctcaggttg agtagtcact ctaatgcct ctgcagattg tatttcattc   600

tgttcctttc tctggactcc cactgcactt gcccagactt ctatcagata acctataaca   660

atatcatgcc tttgcattca catgactgtc tctcccctac cacaccataa gctctatgtt   720

gtgtaggttt ttctatccaa acactcagca tctgtcctgg tcataatgtg tgcttaatag   780

ccaatgaaag tttgaagaat tttcccaatt tcccgatctt gaattccaaa atcactgtga   840

atcctcctct aaatctttct agtcaccaag tcttgtagat ttcttatgtc acatgtttct   900

tgatgctgtc tcttctcttc tgttactgtc gctacgctca cccaagatcc tacactttgt 960

acaactgcag cgtcctcatc ttggccttcc tgctcttagt ctttctcttg tcaaatcagt 1020

cctatgtttc ttctgcaaga ataaactaaa ggtgctattt gtatgaaggc taaatttaaa 1080

ttccttactc tgatattcag gaccctgcca tatctcctgc aatttctcca ttcaaaacct 1140

gagttttctt tcaccatttt ttttcttatt gtcactcgga tactgaagag acacatcttt 1200

tcctctttct tctctcccat tctccatttg tttatattct actcttcgtt taaggcctaa 1260

cccaaatttc actttcccca ggaagttttt gattctttg tcccggctg atgtctgtct 1320

tctttgactt atttatttac ttatttattc atttattgag acagagtctt gctctgtcgc 1380

ccaggctgaa gtgcagtggc atgatcttgg ctcactgcaa cctccatctc ctgggttcaa 1440

gcgattctca tgcctcagtc aaccgagtgg ctaggactac aggcatacgc caccatgcct 1500

ggccaatttt tgtatttca gtagaggcag ggtttcatca tgttggccag gctggtcttg 1560

aacttctgac ctcaagtgat ctgcccgccc tggccttcca aagtgctggg attacaggag 1620

tgaaccactg cacccacct gtcttctttg acttattaca tttttttgg agacagagtc 1680

tctctctatc ccctaggctg gagtgtggtg gcacgatctc ggctcactgc aacctctgcc 1740

tcccggattc aagcgattcc catgcctcag cctcctgagt ggctgggatt acaggcaccc 1800

accaccaccc agctaatttt tgtattttta atagagatgg tgtttcacca tgttggctgg 1860

gctggtcttg aacttctgac ctcaggtgat ccacctgcct tggcctccca aagtgctggg 1920

attacaggtg tgagccacca cgcccagact gacttattac tatttattat tatacaatta 1980

actgttggag catacttggg catttagtcg cctgaggcag atattgacaa tttatgacct 2040

acgagcccaa tctggcctgc tgcctgtgag ctaagaatgg ttttacatta atattaaaca 2100

tttttaaag aagaatattt tgtaacgcat aaaaattacg tgaaatttag actttagtgt 2160

agatggagtc tcactctgtt gccaggctgg agtgcagtgg caggatctca gctcactgta 2220

acctctgcct ccctggttca agcgattctc ctgcctcagc ctcccaacta gctgggacta 2280

taggcccgtg ccaccacacc cagctaattt ttgtatttt agtagagaca gggtttcatc 2340

aggatggtct cgatctcctg acctcgtggt ccacccccct tggcctccca aagtgttggg 2400

attacaggcg tgagccacca tgcctggccg tctatgtcct ccttcaagct ataatgggag 2460

acttaagtag tcttgacaga taacatacgt ggcctgcaaa gcctaaaata tttatcatct 2520

ggttgataca gaaaaagctt actgatccct gatctcagat cttgaattct ctttataatc 2580

ttttcatagc tgtttaagaa ctttggaaag gtctgcttca ctaaagataa tcttttgaag 2640

```
ctaattagtg gttcattaga acagtggggg aagctggagg agtaggcttt atagagtgtg   2700

taggagctat cctagttaga aacttagtaa cttaggcaac tggattgcca ttggaaagtg   2760

agagtcagag gatctcaggt ggatgaggga aaagacgtga tcttttttcc atcttctctt   2820

tttctttttt cttttttttt gagacggagt ctcactctgt cgcccagggt ggagtgcagt   2880

ggcgtgatct ctgctcactg caacctccgc ctcccgggtt caagcaattc ttctgcctca   2940

gcctcctgag tagctgggac tacaggcgca cgccaccgtg cccagctaat ttttgtattt   3000

tttagtaggg acggggtttc accatgttgt tcaagctggt cttgaagtcc tgacctcatg   3060

atccgcccac ctcggcctcc cagggtgctg ggattacagg catgagccac cacgctaggc   3120

ctccatcttc tctttttctg acttagcaga ggaaatgtaa aagcaaatgg gatctagcta   3180

cagaaaggag tatctgaggt cttacctgaa tctggttgtt gagaagagat caatggttgc   3240

tggctgacag cagctcaact atcaatgata cagttataac aggcaatgaa agaaatcatc   3300

aaaagggtat aactgctaaa gctgaaagta gcctcagctg actgaagctc taagtggcta   3360

agaggtttta cgatgcctag gaatattata ggcttgataa tttcaaggat ttctttaaag   3420

aagaaaagaa agctaaatat ttagataaac aagaatagca actgaagtta tcagaaagtt   3480

catgcctttt accaggtgtt ctattcttc tcatcttccc ctaatcatat tttttcctta   3540

aaattattca gcgtagtaac tttttttttt tttttgata tggagcttca ctcttgttgc   3600

ccaggctaga gtgcagtggc atgatctcgg ctcaccacaa cctctgcctc ccgggttcaa   3660

gcaattctcc tgcctcagcc tcccgagtag ctgggattac aggcatgcac caccacgctt   3720

ggctagtttt gtatttttgg tagagatggg gtttctccgt gttggcttgg ctggtctcaa   3780

actcctgacc tcaggtgatc cgcctgcctt ggcctcccaa actgctggga tcataggcat   3840

gagctaccag gcctggccca cagcatagta actatttagt aataaattat atagattgga   3900

ttgtggggcc catctttcac gtctgccccg tataccctga cagaatccac ttggctagtt   3960

tgggtactca aatatggtac cagcaaccag atggtgagtt gctgcctgaa atgtgtgaag   4020

aaacaagcta gactctagga gacaggactt gcatatttta atggaaacaa taggtgcaag   4080

gtcataggaa gtgtcttttt ataaatagct tcacagcctt ggcacagtgg agagcacatt   4140

gtcagactga gattgaatga ataaacagtt ggaaattaac ttttgtgggg catcatttac   4200

ctattcaagt ggacactgga gaccatcatt ttgttggagt gagttttttg tttttttgca   4260

ttgtgtggga ggtagtgaga agtgaagcca gctggacttc tgggtcgggt ggggacttgg   4320

agaacttttc tgtctcacaa aaggattgta aaatgcgcga atcagcactc tgtaactagg   4380
```

attgtaaaat gcaccaatca gtggtctgta gctagctaga ggtttgtaaa atggaccaat   4440

cagcattctg taaaatggac caatcagcac tctgtaaaat ggaccaatca gcattctgta   4500

aaatgaacca atcagcagga catgggcagg gacaaataag ggaataaaag ctggccaccc   4560

cagccagcag cagcaacccg cttgggtccc cttccatgct gtggaagctt tgttctttcg   4620

cttttcacaa taaatcttgc tgctgctc   4648

<210> 489

<211> 3307

<212> DNA

<213> Homo sapiens

<400> 489

ttgtacccat tagcagtcac tccctattct tccctcaacc tggctcctgg caaccactaa   60

tctactttct gtctctgtgg atttaccttt tctggacatc tcatacaaat ggaatcacac   120

aatatatggc cttttgtgcc ccaggttctc tcatttagca taatgttttc atctatgtgt   180

gtcatgtatc agtattttat tccattttat tgctggataa ctccattaca tatactgtgt   240

gtgtgtgtgt gtgtgtgtgt gtgtattttt tgtttgttta tccattcaca ttttgtttgt   300

ccattcattg attgatgcat atttgggttg tttgcacttt tggccatcat gaataatgct   360

gttacgaaaa tttgtgtaga agtttttatg tggacatacc ttgtcagttc tcttaggtat   420

atacccagga gtggaactga tgggacatat gatgactcta aacttttttg ggaactgcca   480

cacttttcct cagaggttgt accactttac attcctgccg gcagtgtatg ggggtttcac   540

cttcacattc catctacatc tgacattagt atcttcctca ctggagttat attttgttat   600

ttaatagttt tgcaaaatgc attaaattca cttccattta aattgtttaa gatacagcag   660

tttgaatgtg tcaatgatgc tatctttaga aattttattc taaaacacaa atatcttttg   720

tgtaatatta ggacagtttt ttaaaagtaa ttcagtatgt ttcttttttg aaaaggttct   780

ttataacagt atcccgttct tttaataagt tcataccctc aaattttctc tgcctttgcc   840

cttctccttt ttaattccaa taagtgcctt tttgcacatc tttaccttcc tatctaaagt   900

agcatttctg ttacaccatc accaaactct gcttaatttt ctttgcagca gttgcctact   960

```
gcttaacatt agttatctgt ttctttgttt ctaatgagaa agaccaacaa taaaatcaag  1020

ttccatgaat ttctgttcac agtggtgtcc ccaaagtcta caacagtgca tggagtgtag  1080

aaaatattga ataaatattt attgaaaaga atgaataaat gagataattt tacattagtt  1140

tcagttcttg agctaggcca aatcacaaaa gtttggcttg gtttgaagag tggttaagaa  1200

tgatgactcc aacttggtct gttactgaac cataaggttc ttcctcatcc ttccagcctc  1260

taaaaaatgg tgcacccaaa acccctgtcc ttagtcatct tagcctctcc atttatactt  1320

gctcctgcat ttggctttaa tgccattcac acactgatgt ctcccacatt tatgtttata  1380

tctctaggct ccatcttctt gatctctagt ctggtttaac tagcacttta cttggcatct  1440

ttgtttggat atgtgatagg ttttcaaaca taatgtgtct aaaatggaaa ctttaatttc  1500

ttgttccttg tccgttgagc tgtctctgca tggcacgaga agaatagatt tttcttacaa  1560

tgctcttcat caataaatag aaaatccttg cttccggttg ctgacacaaa aagcttgact  1620

tctctttttc tatcctattt aattaatcca ctcaaatcct atgggcagta ttttcaaagt  1680

atatccagaa tcagtaacat cccaccactt ctatctctac tacctttca ttgctatatt  1740

gtctcttgct ggggttaatg acgctttcta attggtcttc ttttgccccт tacccccagt  1800

agccttgact gttctctacc caacagccaa aatgattctt ttttttgttt ttttggtttt  1860

ttttttgaga ctgagtctca cactgtcacc tgggctggat gtgcaatggc gtgatctcgg  1920

ctcactgcaa cctctgcctc ccaggttcac gttattctcc tgtcttagcc tcccgagtag  1980

ctgggactac aggcacacac ccccatgccc tgctaatttt ttgtattttt agtagagatg  2040

gggtttcact atgttggcca ggctggtctc gaactcctga cctcgtgatc tgcctgcctt  2100

ggcctcccag aatgctggga ttacaggcgt gagccaccac acccggccaa aatgattctt  2160

tagagtaagt catctcctac cattcctctg ctcaaaatgc ctcaacacaa tctgggcctt  2220

gctactgctt ttatgttctc ttgttccctt gcttacattg cccttaaaag agttttatgc  2280

tgcacattga agcccagact ccctgaaata tcctgtgtta cagaagctta gcaaactaga  2340

aatgttggtt ttgcatgaga ctgttcaaag aaaagagcaa cttacttact ctttgtataa  2400

gcctattttt gggtttctag ttggatattc tttcccctt ttttgttctt ataaaccag   2460

gtaaaggtat tagtacagat tgtaagtttt tagaagagca tagaatattt gggtaataag  2520

gcaaatttat ttttcctatt ttgctcgtaa gtcagtttgg tttcctcaga tgggggatcc  2580

attttgaatt tagagataac cacaaaaaca tcctaaaata ctacaagaat aatgattttg  2640

catttgcagg ttgatgttat ttattttttt gagacagagt cttgctctgt tgcccagact  2700
```

agagtgcagt ggtgtaatca cagcatacta cagccccaac cttccaggct cagttgatcc 2760

tcccacctca tcctcctgag taactgggac tacaggcatg tgctgccatg accagctttt 2820

tttttttttt tttttttttt ttgagacaga gtttcactct gttgcccagg ctggtctcaa 2880

acttctgagc tcaggctatc tgcctcagcc ttcgaaagtg ctgggattat aggcattaag 2940

ccaccttgcc tggcctgtag gttgatttta attgttgctt tattcatcca agttttatga 3000

tatttttttgt tttactacga acattaggaa tgttagcctt tgatactgtt tttgcagaaa 3060

caggttaaga ctaacaggag ttttacaaag gaactgtcga attgggattt gactagtggg 3120

aattggctgg gtgataatca acttttttctt ggctgactct gatcagcttc ttaggcctgt 3180

gtatatacaa tacctttgtg aggatatggc cgattagggg aaaaactatt gccaattttg 3240

cctcccctcc tctttttttt ttcttcttcc ccctcttccc ctccccacca aataaacatg 3300

atatttc 3307

<210> 490

<211> 3320

<212> DNA

<213> Homo sapiens

<400> 490

gcttgtcctc tcctgcagac caagtccgga acagctacta catcggggcc gatggctcct 60

tgcggctgct gctggccaac ggcatggagg tggcgctgca gactgagccc cacttgctgg 120

ctggcaccgt caaccccacc gtgggcaaga ggaatgtcac gctgcccatc gacaacggcc 180

tcaacctggt ggagtggcgc cagcgcaaag agcaggctcg gggccaggtc actgtctttg 240

ggcgccggct gcgggttcac aaccgaaatc tcctatctct ggactttgat cgcgtaacac 300

gcacagagaa gatctatgat gaccaccgca agttcaccct tcggattctg tacgaccagg 360

cggggcggcc cagcctctgg tcacccagca gcaggctgaa tggtgtcaac gtgacatact 420

cccctggggg ttacattgct ggcatccaga ggggcatcat gtctgaaaga atggaatacg 480

accaggcggg ccgcatcaca tccaggatct tcgctgatgg gaagacatgg agctacacat 540

acttagagaa gtccatggtg ctgctactac acagccagag gcagtatatc tttgagttcg 600

```
acaagaatga ccgcctccct tctgtgacga tgcccaacgt ggcgcggcag acactagaga    660

ccatccgctc agtgggctac tacagaaaca tctatcagcc ccctgagggc aatgcctcag    720

tcatacagga cttcactgag gatgggcacc tccttcacac cttctacctg ggcactggcc    780

gcagggtgat atacaagtat ggcaaactgt caaagctggc agagacgctc tatgacacca    840

ccaaggtcag tttcacctat gacgagacgg caggcatgct gaagaccatc aacctacaga    900

atgagggctt cacctgcacc atccgctacc gtcagattgg ccccctgatt gaccgacaga    960

tcttccgttt cactgaggaa ggcatggtca acgcccgttt tgactacaac tatgacaaca   1020

gcttccgggt gaccagcatg caggctgtga tcaacgagac cccactgccc attgatctct   1080

atcgctatga tgatgtgtca ggcaagacag agcagtttgg gaagtttggt gtcatttact   1140

atgacattaa ccagatcatc accacagctg tcatgaccca caccaagcat tttgatgcat   1200

atggcaggat gaaggaagtg cagtatgaga tcttccgctc gctcatgtac tggatgaccg   1260

tccagtatga taacatgggg cgagtagtga agaaggagct gaaggtagga ccctacgcca   1320

ataccactcg ctactcctat gagtatgatg ctgacggcca gctgcagaca gtctccatca   1380

atgacaagcc actctggcgc tacagctacg acctcaatgg gaacctgcac ttactgagcc   1440

ctgggaacag tgcacggctc acaccactac ggtatgacat ccgcgaccgc atcactcggc   1500

tgggtgacgt gcaatacaag atggatgagg atggcttcct gaggcagcgg ggcggtgata   1560

tctttgagta caactcagct ggcctgctca tcaaggccta caaccgggct ggcagctgga   1620

gtgtcaggta ccgctacgat ggcctggggc ggcgcgtgtc cagcaagagc agccacagcc   1680

accacctgca gttcttctat gcagacctga ccaacccccac caaggtcacc cacctgtaca   1740

accactccag ctctgagatc acctccctct actacgactt gcaaggacac ctctttgcca   1800

tggagctgag cagtggtgat gagtcttaca tagcttgtga acatcgggg acccctcttg   1860

ctgtctttag tggaacaggt ttgatgatca agcaaatcct gtacacagcc tatggggaga   1920

tctacatgga taccaacccc aactttcaga tcatcatagg ctaccatggt ggcctctatg   1980

atccactcac caagcttgtc cacatgggcc ggcgagatta tgatgtgctg ccggacgct    2040

ggactagccc agaccacgag ctgtggaagc accttagtag cagcaacgtc atgcctttta   2100

atctctatat gttcaaaaac aacaacccca tcagcaactc ccaggacatc aagtgcttca   2160

tgacagatgt taacagctgg ctgctcacct ttggattcca gctacacaac gtgatccctg   2220

gttatcccaa accagacatg gatgccatgg aaccctccta cgagctcatc cacacacaga   2280

tgaaaacgca ggagtgggac aacagcaagt ctatcctcgg ggtacagtgt gaagtacaga   2340
```

agcagctcaa ggcctttgtc accttagaac ggtttgacca gctctatggc tccacaatca 2400

ccagctgcca gcaggctcca aagaccaaga agtttgcatc cagcggctca gtctttggca 2460

aggggggtcaa gtttgccttg aaggatggcc gagtgaccac agacatcatc agtgtggcca 2520

atgaggatgg gcgaagggtt gctgccatct tgaaccatgc ccactaccta gagaacctgc 2580

acttcaccat tgatgggggtg datacccatt actttgtgaa accaggacct tcagaaggtg 2640

acctggccat cctgggcctc agtgggggggc ggcgaaccct ggagaatggg gtcaacgtca 2700

ctgtgtccca gatcaacaca gtacttaatg gcaggactag acgctacaca gacatccagc 2760

tccagtacgg ggcactgtgc ttgaacacac gctacgggac aacgttggat gaggagaagg 2820

cacgggtcct ggagctggcc cggcagagag ccgtgcgcca agcgtgggcc cgcgagcagc 2880

agagactgcg ggaaggggag gaaggcctgc gggcctggac agaggggggag aagcagcagg 2940

tgctgagcac agggcggggtg caaggctacg acggcttttt cgtgatctct gtcgagcagt 3000

acccagaact gtcagacagc gccaacaaca tccacttcat gagacagagc gagatggggcc 3060

ggaggtgaca gagaggacca aggacttctt gccaaagaca gctactcttt tgtggccgca 3120

tacctgactg tgttgtactt ttaaaaaaat gatttttaa caagtgcaga aacaaaaaga 3180

tactggttgc attgtaactc atgcaacatc cttttttta gaaaagaaaa acacagattt 3240

ggccttcgca cattttttgc aaagaacaga aggtatttttt ttctgtagtg tgatcacaat 3300

gaaaacttta ttgtctttttg 3320

<210> 491

<211> 3524

<212> DNA

<213> Homo sapiens

<400> 491

ttaaaaatta gctgggcgtg tgcatgctta tagtcccagc tactcaggag gctgaggtga 60

gaggatcgct gaactgtgga ggtcaaggct gcagtgagcc ttgttcgggc cactgcattc 120

cagcgtgggt gacagagcga gaccttgtct ctgaaaaaaa aaaaaagata acctctgtct 180

ttttcagtat cttgtacact tctcatagga attatctaca tttgccaaac tggttgtttc 240

attatgtagc caccagctgt ttgcccttac ctaacagaga ttactattgt actgattgtt　300

ctctgtactt agtgtcagag ctattcagag atactagatg attttctttc aatgtatatg　360

tgtatggctt ctcttctcaa caaggggctt cgctccaatg ttatcttgaa cttccgtgat　420

aagtcattcc acagctcttt caaaataagt acttggaatt tttgttgagt gtataattat　480

ttgtgcatct tgaaatctgc ttattctctt ctttcttttt aaaaaaatca ttctcactgt　540

catcttatgc ttcttctctt cttagatatc aatgatgtca aacggctgaa acctggctac　600

ttagaagcta ctgtggactg gtttagaagg tataaggttc ctgatggaaa accagaaaat　660

gagtttgcgt ttaatgcaga atttaaagat aaggactttg ccattgatat tattaaaagc　720

actcatgacc attggaaagc attagtgact aagaaaacga atggaaaagg aatcagttgc　780

atgaatacaa ctttgtctga gagccccttc aagtgtgatc ctgatgctgc cagagccatt　840

gtggatgctg tatgtaaaag tttccttaaa aaaaaaacaa gcctggttgc taaaaactat　900

gatgctaaat ggggagagga agtacttgtt tcgacaaata cttgagtgcc ttttgtatgc　960

atgttactgt gtggagtctt gaaattagaa accatgaaca catgcaagtg gccatttgac　1020

tgagggagaa gctgagggag tgattctaat caatcataag ttggacagat agcatggtag　1080

taagatttgt aaaaatcaga atggttccag aatgtaccaa gtaacctgtg tgcctatgac　1140

ccatcataag ccatttccgc aaaagaatca atgggaattt acttgacttg gttctagcaa　1200

ggactgagga aggtatcaag ttttaggtac cattgcagga atgattcata atctaagaaa　1260

ggctttcatg tgaggtagta aaagcacccg tcaaagcaat aattttgttt ttgtactatt　1320

tttaattatt tggtttggat taaccaaaaa attgaacgag atcatcttaa attattttca　1380

tttataatat taaataagga aaacaaaaga aaatgaggtc tgactttttt actgccttgt　1440

aaatggggta gaacaaggaa aaaaggacaa tttaatgatg aaaccagtac atttagtttt　1500

atctttattt atgtatgaat cccgacaaag ttgagataaa taagaaaaat tataagggaa　1560

aagccagtgg ttaactatta taattttttca gtgagaacac tgcccatatt ttataaatat　1620

gtgtgtatat ataaaattgt tatatatgca taaatcagtt tttattattt caaaaaacat　1680

tcttattatt ctgcatgtca taaaaagtca agaggcttga attttttttt tttttttga　1740

gacaagtctc gctctgttgc ccagactgga gtgcagtggc gcaatctcag cttactgcaa　1800

cctccgcctc ccaggttcaa gcggttctct gcctcagcct cccgagcagc tgggattaca　1860

ggtgcccgcc accatgccca gctttattt ttagtagaga cggggtttca ccatcttggt　1920

caggctggtc ttgaactcct gaccttgtga tccacccact tcagcctccc gaagtgttgg　1980

gattatgggc atgagccact gcactgtcca agaggcttga atttgttagc atctcagcag 2040

tagagcaaac cttctattgt tcctatatat tataaattac gtttagatcc taaaatttgg 2100

gatagtcttc agattctctt aaatttttgt cagtatacct ttttagcttt ttaaaaaatg 2160

agattagact aatagatttt aatattttat attttagtta ccaccaccct gtgaatctgc 2220

ctgcacagta ccaacagacg gtaagatttc tattccagta aaatttcatt aaacattaca 2280

cagttatgga aaaattatgt tacttttatt tttagttgac aaatgataat taaatatatt 2340

tatgggtaca gtgtgatgtt ttgatatatg tttacaatgt ggaatgatta aatctggcta 2400

attacgaaat cattacctca catacttaat cattattcgt tgtgtggtaa aaacatttga 2460

aatctactct tagcaatttt gaaatagatg ttacagtcac catcctgtgc aatagatcac 2520

taaagcttat tccttttgtc taactaaaac ttggtaccct ttgaccatcg cctgcccttt 2580

ccccatcctt cagctcctgg caaccaccat tctactctct acctctatga atttaccttt 2640

tttatattgc acatataaat gagatcatgt ggtatttgtc tttctgtacc tggcttgttt 2700

tttgttttttt gacacagagt cacccaggct gtcactctgt cgcccaggct ggggtgcagg 2760

ggcacaatca cggctcattg tacccgtaac ccccccaagt taaagtgatt ctcccatctc 2820

agcctcccaa atagctggga ctgcagacat gtgccaccat acctgtctaa ttttttttata 2880

atttgtagag atagagtttc accatgttgc ccaagctggt ctcaaaccag gtctcgaacc 2940

aggctggtct tgaacactaa tcaggccggg tttcgccatg tcacccaggc tggcgatcca 3000

cctaccttgt cctcccaaag tgctgggatt acaggcgtga gccactgcac gcagccacgt 3060

acatattttt aacatacaca ggaagagagg gaagaagggt gagaagagaa gcatttttag 3120

aattctgtag tgtacgtggg aaggaagatg agctgctaca taccacctttt agtgccacac 3180

tgtatcacag tggtttccaa accatgaccc attgtgcccc tctgagttcc atggaggtgc 3240

ccgctggaca ctggagggga tcctgagtgg gctgatctcc acattcccac ctggccacag 3300

gctgcttcac ccagaaaaca gttctctcct ccttagatgt cagaattctc tgtaagatttt 3360

ttctggtaag aaaatgattc tgccacttaa aaaaacaagt ttgaaggctg ggtgtggtgg 3420

ctcacgcctg tcatcccagc actttgggag gctgaggcgg gcggatcact tgagcccagg 3480

agttcgagac cagcctggcc aacatggaga aaccatgtct ctac 3524

<210> 492

<211> 3377

<212> DNA

<213> Homo sapiens

<400> 492

```
ttagatgcaa gtttaagacc atttgccatg tatgtgggat cactgacaca caatttgtat    60

tttgtagcta gtacatacgt gtattttata cgaactagaa cagtggaaat gctgcacaaa   120

gttaactcaa ttgttttgat tttacttatt gatattagca catcctcaac actccctccc   180

tgtggcttgc tagtaagtaa ggaagaactg aaaggaaaag gaactcggtt gccctatctt   240

tccctttcct tctggattat tttcagttta agtgcttggc caatacaggg aagtaacagg   300

agtaaggaag gatatggtca ggttccttgg tcattcatgt ctcttagaac tccagtacct   360

tctttctgca tttgaagcaa gttgagctta gaacagaaag tgtgaccttt aggactgttc   420

acaccagtgc ttacttagtc atagatggaa catgcttacc ttttacggac tttgagtcct   480

tattgaactc cccatgcacc agggattcac aagaattctg agctcatggg acatcatgaa   540

tgtggtatgc aaatgaggtg gcaaggagca cgtagctcct ttgctcacat gcgtgcatca   600

tggtcccgtt ggacttcact tgaaaacaca ggttcgaaga taaaatgatt aagaatttca   660

agacagtgcc atcagagtat taaaccaagc ttcaggccct tctgagggca aggctctatg   720

cacatcacat gcccctgaag ctgaccctgc ttgcctgatt ctctgacatg aagaaagaaa   780

ttccactgtg ctttaaaaaa aaaaaaaaa aaaaaaattc aggacagatt taatttggac   840

ttgagtaccc aggtgttagc aatatcctac agattccaga aaacaattta gtccattgtt   900

gaaagagtac ccttgaaggc atgtcttttt ttaatcccat tatcttattc atctcagttc   960

cttttattta tttgcaactt agtcaatctc aggtctcaca tccaaattgg acctcctcag  1020

ggaggaccat gctacaattt gaggacagag cacaggtctg gggtgggacc gggtggagtg  1080

gggagtgccc ctagaaatcc agtccaggca agggcacaga aatgaacttt tcagggtcag  1140

ggaaagatct agaaggacgt gaaatcacca gctagtcttt cctctctcta cctctccctg  1200

ggacctgtat gatggtggtg ggagcataaa ggactttgaa aatagaaata gcattttgta  1260

agtgtcatgt aggaggtatc atgctgaggt gctgcatgca gtgttacact cctaacaata  1320

gccttatggg ggaagttctc ttatgagtcc ttttggtaga caatgaagct gaaactcagg  1380

aaggtcacat ggtatcataa ggctggtaag cattggagtg gggctggcag ggatgctgga  1440
```

```
caaggttgca gacatgagag ccttcctgag ttgcggaagt gtgtggcccc atgttttatc  1500

agagtttgaa ggggaactcc agattactag gttttgggga gatagttgca agtgatggaa  1560

tagccattct gagtgaagct ttctttggtg gtgacctgga atctctgagt tcaacagttg  1620

atgctgctga tcacctagtc acctggggcc ttattgagct tttgttcctg ccatcattgc  1680

tgcctgactc ttggtttccc tactctggca tccagtggcc tgagtcaagg ttcagctcag  1740

cttctgacca gcttcttgac caccttggcc aagtccgtgt acagctccct ttggtcttcg  1800

tttcttcatc catgcaaggg ggatggatac tgtcatgaag gcaaaaatga aagaacttgg  1860

gttaaagtta ttgtagtagt gctggtgctg aggagaccct cagctttgag tgttggcttc  1920

tgtccattcc tcctgagcta ctgtcacatc tcatgtgggt gcagtgggtc ctctggacac  1980

agcgttgagc ccagtccatg ggttcctcat atagccagca ccttggcctg tagcaaataa  2040

aaacaaacca cttgaaagga actcgccaag tatccctgat agctggcact cacagtttgt  2100

ttgtgtgatg actttgcgta ttagtcattt tcctgttgct tataacaaga tacctgaaat  2160

tgggaaactt acaaagaaaa aaaaattatt tcttacagtt acggaggctg agaagtgcaa  2220

ggtccagggg gctgcatctg gtgagggcct tcttgctgat ggggacagtc ccaaggtggt  2280

acagagcatc acatggcaag ggggctgagt gtgctaactc aggtctctct tcctcttctt  2340

atgaaaccac cagtaccctc ccatgataat ccattcatcc attaacacat taatttatta  2400

atcatgaatg attaattatc atgacccaat cacctcttaa aggactcacc tttcagtact  2460

gccacattgg ggattaagtt tccaacacat gaaatttggg gatacgttca aaccataaca  2520

gttggtgata gttgcagagg agcatgtaca aagattagaa aaatataacc aacccctggg  2580

tttgttggat gctttctgtt gctcagatca ttgtgacgtg agcactgtag gaggggtgga  2640

tttgaagggg tctggttccc caagaggtat gtgggcatct gtgtgcctgc atgagaaagc  2700

acctttcctg gcagcccgac aggtagaaac tcattaatcc acacattgac tctatttcag  2760

ggaaagatga cgtcaactcc tgcatgttga aggcagggag tggctgaaac agcatcaagg  2820

cgtgaaggct tccctgagcc accctgagtt ctcagaaggg ttcttaaaga agtcacgtca  2880

tctttatcgc tacttctgct gcacttatcc cataattttc caacttctgt tgtgagaact  2940

tttacagccc aagtgtcctg tgatttaacc ttcaatttgg taatgtctgt cttcctttag  3000

caaagcaggc tgaaggtgtt gagatccgcc taccttggga agctttccat ggtggcacag  3060

tattgaaggt taggcctcat ccaagttggc acaagccttt gtctccaacc tgggtgggag  3120

gaaggtcaag gcagatgagt gtcctttcag tgcagggaac tgccatccag ggaggcttgc  3180
```

atttataact gagagacagc ggggtgagtt agaatgctaa gaaggggggaa atgggctggg   3240

cgtggtcacg cctgtaatgc cagctatttg ggaggctgag acaggcagat ggcttgagcc   3300

caggagtttg aggctgcagt gatccgtgat cgcaccactg caccccagcc tgggtgataa   3360

agtgatacct ggactct   3377

<210> 493

<211> 6025

<212> DNA

<213> Homo sapiens

<400> 493

cgtgtgcagt gtggccccca acctccccgc cgtgtcaccc tgccgctccg actgcgactc   60

catccggaag aatggctggg acgcgggaac tgagaacaaa ggggttgatg acccgggaga   120

agtgacctgc tttgcaggta gtaataaagg cagcaactct gaagttcagt ccctcagctc   180

cttccagtca gattctggtg acgacaatgc ctatcactgg gacacctctg attggatgcc   240

aggggcccgc ctgtcggaca tagaggaagt gcccaactat gagaaccagg atggagggtc   300

tgcacaccag gggagcacac gggagctgga gagcgattac tacctgggtg gttatgacat   360

tgacagtgaa tacccacccc ctcatgaaga ggagttcttg agtcaggacc agctgcctcc   420

tcctctcccg gaggacttcc cagaccaata tgaggccctg ccaccctccc agcctgtctc   480

cctggccagc acactgagcc cagactgcag gagaaggccc cagtttcatc ctagccagta   540

tctccctcct cacccattcc ccaacgaaac ggatttggtg ggcccgcctg ccagctgtga   600

atttagtact tttgctgtga gcatgaacca gggcacagag cccacaggcc cagcagacag   660

cgtgtctctg tccttgcaca attccagagg cacctcatcc tcggatgtgt ctgccaactg   720

cggctttgac gattccgaag tagccatgag tgactacgag agcgtgggag agctcagcct   780

cgccagcctt cacattccct ttgtggagac tcagcatcag actcaagtgt agacatcaca   840

tcttgggtac ttcaccctgt ttgttacaga aaagtggaag cagattggct gggcttctgt   900

cccagtggag cattgtctgt ggaatgagaa gggaatactg tattttccca ctagaaactt   960

cttcacaagt catactgtcc caacaagcaa gcttgattcc agttgggtga aaatgaaagg   1020

ctcagaaatt gttttttgaga ggtgactggt aatccttgat gtaggtacct atgttcacag   1080

ctaaaaatgc aaagagggaa aaattatttc acccactaag ttatacagcc agtcttgtat   1140

ggctttgtgc agtattgtgc cctggaaagt gttacagcat cagtccttgc agtattaaaa   1200

actggcaaca atcaaagagg cattgttgca tgtaattttg agccaatgaa atgaaaatag   1260

tagtaatgat tgttggaaaa gttagtctct taggcgaaag agaagagaaa caaatattat   1320

taaacaaacc agaaaatggg ctgaagcctt ttaaatcaac tctattttttt tgataagctg   1380

cccaatttttc agctataaaa ttaggcttga ataacatgtt tagtatgctc agttatttct   1440

gtttgtttgt gttaagcatc caatctaata tagttgggtt ttatgatctt caagaaaggt   1500

atcaatgaag agcaacatga ggcttttttgg gttccatttg gtgggtgggg gaggaagtta   1560

aagttgtttg aacattagaa agaatgtgat tatctggttg gttttgtgtt ttctggtaaa   1620

tattccagtt ggtaaatcta acattgctac agaagttggc tttgttcata tagcttctct   1680

acaattagat attttttagaa gtttaagcaa aactcacaaa ttcaggggggg aaaaaagaaa   1740

aaacgatacc ttcaaagttt gcggcctaga taatcacaat tcttcataat gcagaggaaa   1800

ggtgtctgtt attctaaatc ggtagcatca ccattataaa tacaattatg ttaagaaaag   1860

aggaaagtag actagttatt gtgtataaat tataatagtg tgtgtgtgtc tgggcctatg   1920

tacaaatatg tgcttgcact cagtaaggct gctcttgagg aaagctaatg tgaaggtttt   1980

gggaaatgga ccatgttgaa aattctgccg gcgagcatgg cataccttttc aatttctctg   2040

atctctatgg tgttagagaa acatcaaatg ccatatttta ctctggttca gttaacttta   2100

ttttggtact gccaataaag caaaattgtg ctttttttttt tttttctcaa gacagagtct   2160

tgctctgtca cccaggctag agtgcaatgg catgatctca gctcactgca atctccacct   2220

cctgggttca agcgattctc ctgcctcagc ctcccaggtt gctggggtta caggtgtgtg   2280

ccaccacgcc tggctaattt tttgtatttt tagtagagat ggggtttcac catgttggcc   2340

aggctggtct caaactcctg acctcgtaat ccacctgccg tggcctccca aagtgctggg   2400

attacaggca tgagccaccg tgcccagccc aaaactgtgc tttttaaaaa cagtattttg   2460

ttataatttt ccagaactta cctctgtttt aaaagtgtgt aatgtttgat tacaccctgg   2520

gattcccttc tcatctgtgg gctttggcca tgatttccaa aattaacagg agaatcattc   2580

cactggaaat ataacaatcc agtcctcaaa actgaaagtt gacaggttga gggactttcc   2640

ttttttgctt caatcagatt acggccgcct gtgcagtggc catggtaaat atatgcatat   2700

ttgcactatc tgcttaatga gcaaatctgt gtccacagtt tctgatgaca tatggcattg   2760

gtgtgtaaat tgtactgtcc ctagtctgtg cattattcac tcagacatat ttttagttat 2820

ttcaattgcg tttaatccac ttctttttta tgagtcagtg tttctgaatg tttatgcaaa 2880

aaaaaaaatc cttttttcatt cccaaacttt ctaagtaagt ggatacacta cacttcacaa 2940

gttttccagc ctttctcttc ctgtctcttg gtcagaccta ctcatggagg tattatccac 3000

actgtgatct tgaaataaat gaatttcact aaggctgctt tcgagaacaa agtctttggt 3060

atttttctta tgtaagaagc acatttgcaa gaatcatgga aaaaatgaca aactaatggc 3120

ctagaataga gtgactgcta cactttaagt aatgcaatga cataaaaacc atcaaagtaa 3180

aaccaacatg tcatttcctg cccccaggaa atattagaat gagattaatg ctgatgagtc 3240

cctactgctt acacagcatc tctttgaggg agaatgcctg actgacacag taatgaaaga 3300

ataaatagat cctaatgcag tcatgaagcc actgaagaaa attgtgccca ccctttgctg 3360

tgacctatat aaaatatctc tttctttggg atatcatccc ctgattttct gcagaatagc 3420

tctgcagcta aatatatacc aggcaagcat gtattgtgtt ttgatttatt atctttaaac 3480

acatgatatc tcttcacttt ttggaaagtt agatttctct gtagattatg aaatgctttg 3540

cagtcaggcc aagatgctac taggtgggga tgatcactaa ttcaaaaaag ctggaagaat 3600

cctatttgct agtccaaact ccttatttta tcaaagagga aacatacccca gagtgggaaa 3660

gagacttgcc caagcccaca gaggaagtta attcgcttaa caaggagtag aacccatcca 3720

tctagccaat attctttta catcatattg ttcacccta cactgccttg agcatgggag 3780

tcacctggtt ctgatggacc ctctgacttc caccattcct tctttggaat atgctataaa 3840

agaaaattca tggagaatat ttttctgaaa gcctcatgat cttatgtttc cttgcagtcc 3900

ccctagggag aggggttata gaattcatac atttctgtag acattcatcg aaatgctgct 3960

tttgccaaat gaatgtttgt ataataggga tgaaatgata attacagagt tcagctcaga 4020

ccagtcatca gttgtagtga aactttgatt atactgttac ctactggttg catttttggt 4080

tttggttttg catttttttc ttcccacaaa cactggctac tctttgtcct accccctcca 4140

ccatgatgaa ccatgtggaa actatttaaa tcaattaatg tctttctcat tttttgaaca 4200

tgtatgtgcc acctcctgga agccatttcc cataatctgt tgtaggcact ttactagtat 4260

tgcacacatt ctggttaggt tgagaatagc tagactcttg gtgctcgtca tatagtaagc 4320

aagaacttgg gagtaataaa aggtgaataa aatgcatgct tcatttattc cctttcctct 4380

atgaatattt tgctgctgcg ttctagtcta tgccagcttt ccatgtaccc ttggcctgcc 4440

tattcatgaa atgccatata aaagacttag gaacatgagt aggtggtcca tgctttgagg 4500

```
ttcatccaat tagggaataa atgtgaaagg ctggaaaggg aactagtttc tgggatttgc   4560

ctggaacttc ccttggacat tactagcaca ttctggaaaa aaagcaagtt gaacatatct   4620

accatcagtc ctctcctact tccttcccac cccaccctat ccactacccc cactgatgct   4680

atgtttgcat catcaaagtc aggggaattg agaaaagaga ttatcaaaat aaattattaa   4740

aatccagaaa acagttttat gtgaagtaat tcaggaagat ctagtgttca ttttgcatgg   4800

attgtccaga taattgactc ttcactccgc tgccttccca gtgcacaggt attgctaaag   4860

tggttaggct ttaatgtttt atgtttttag tttcaaacta tgggaaatgg agatttgaag   4920

aggcatttat tccttgtcat cattttgtgt gctctgtgag aaggtggtta tatgtttttg   4980

ctggtttgtg tcccacagtg ttcaactgca cattattctg atgaaaatcc acaatgtctt   5040

tgagcttctg gttgtgtaat gctggggttt aaagtcacca tttgtgggtt tggcatcaat   5100

taatatttag ccagctggct aagagatagg aaaagaatat gatatttctt tccttatgta   5160

ataatgaaaa gcaataatta caagtaggta ataatacaca aaggccataa ttagtctctt   5220

ctagtgttta gaatgcactt gagaatcgta gagtcatttg gagcgtgttt ggaccaatta   5280

gtatgtactg tagtaccctt ctggcaaaca aataactgaa ttgctactat ttaacaatct   5340

tatgagccca cactactgca ttttgggagt ggcaaatgtg tttggaaatg gaagcagttc   5400

tttttaagca ctgtatcaga gagattgtct tgtacgtttg cctgttgcaa acaggctggt   5460

ttgtaaaaga tgtatgtttt ggtgtttgaa atgtttataa aattgtatat aaatggtttc   5520

aattttccag gcttttgtag atactatatt tgatgcctat caggatgctt taatttgggg   5580

ggtcgaatat aattgtaagt catccacgct gttggtctgc aaacttttga ggtaactaca   5640

cacacacaca cacacacaca aggattttag atttgaaaat gatgtttttt actcatttca   5700

aaatgtactg taacctttct ttggttctta ctgttttcat ttaactttct ctgttttcaa   5760

gaaaaattgt ctttattgac atttgtaaaa aagaatgtgt tttgcccagt tattaagtat   5820

tttattttta tgcaatttca gaatcacaat gaggtatgtc atttcttcat atacatgcac   5880

attcacctca acttgcacac acatcacaca ccaaacctta tgcaaagggg aaagctaaca   5940

cttagagtgg attttgtccc ttaaggaaat ggattgttcc tgcatatatt gctggtggca   6000

gtattcagtc ttgtgttctt tttct                                         6025
```

<210> 494

●

<211> 3472

<212> DNA

<213> Homo sapiens

<400> 494

```
aaaaacagca attggacaaa cccagggtaa agggccattt gcagttggag aaaaagagat    60

acttcccctc ccctaaagca tccaggtgac tgtgactggc accgtgcggc agctcagcgt   120

ccatggcatg tcttcccatc tgctcctgac ggccctgaca gacaggtggg tgccccctgc   180

cacgttgggg gtgctgcacc aagcacccgg ctcagcgtct ctactggttc gcccagtgct   240

gctttgttat ggcgccagag ctgggacggg gccagccacc cccaccggta tgctgactcc   300

tccactggca cagtcactcc aggaacaccg aagcctcaga gcctcaggtg ccttttcctt   360

ccaaatatgg ctagcatctc ccaacccgct caacccaagc ccagatcaca tgcagctccc   420

aggccggcac tgttctgaca gcatatggcc attcgggacg datccccccg cagctgctgc   480

cctcgctgtc agcaaggcgg acacataccc agggctcgaa tcttgtgggc tcaggtcctg   540

tgggctgccc cagcccctgg ccacagttcc cctgcacaac gggaacgaca ggatgaatat   600

catgttttca gagagcagat ttttgcttct ttctaaaaat gtatttagtt attttggtac   660

taaaaatgca aggaaagagc cctatatctg gatccaaaca cattgcttct ctctgagtct   720

tcgtgattta cagcatataa attacaagca gcctgagaaa ggggaattac ccccagctgt   780

cagctcagac aattgagacc caggtaggcg gctgatccaa gatcaccgta tactatatgg   840

ctgagctccc tctgtaaata cgcaattact aggatggctg tactgatggg gtacaagggc   900

tgtgaaaaac tcaagaagct gtgaccgcat ccacgggggct accctgcatg gccgcactag   960

ctaatccctg gctccccacg aaactgaagg cttctcattc tcagggcacg tgaaataagg  1020

agtgtcagat ggatatgaaa agtaacagga acaatactgc caaaaatcat ctaacatgta  1080

ccccaacctc cctgtccagc tattttctgt tcctgtctag cagaccaggt ctcgaaggac  1140

gtcggggagg ctgtgtcaaa aaaagactca cgcgggaatg ctattcatga tccacggcag  1200

agcgtcggcc tccaggaggc tcaggaccca ggtcccatct gcaccttgcc ccagtgtgga  1260

cctcgcattc ctaaccaaac ccacgtctcc aggggccagc cggagagccc tttcctggct  1320

gaagacggca ttagcccgca tcccactgtg ctgcaagcca aagcggtgtc cacgtggcag  1380

ctcaggagcc actttccctc tgagatgaca gaggatgcag cctaggcaca tcctgaaacc  1440
```

```
ggtctcgtca gtgtgtgcaa atatgattca tgaaatgtca gcaaaatgtc ttaaagttcc  1500

taacctgggg aactgataca tccctcctaa cgatggtcta gagaagtatt tttagaagct  1560

cttaatgata acatttcttt ctggatttgt gtagatttag tcattagaac gtcttcagag  1620

gcttcaaaga gatgaaatta gaccccttgc cccaactgaa gacactttcc tgtgacattt  1680

tgtgtgaggg tcaaaggaat tttttttttg agacagggtc ttactctgtt gcccaggctg  1740

gagtatagca gtgcgatctt ggctcactgc agcctcagct tcgtgggctc aagtgatcct  1800

cccacttcag cctcccgaat atcctacagg catgcactac cgtgcccagc taacttatat  1860

attttttgta gagatggggt tttgccatgt tgcccagcct ggtcttgaac tcttgagctc  1920

aagcgatcca cctatcttgg tctccaaaag tgctggaatt acaggtgtga gccgctgtgc  1980

ccggcccaga ggaattttta acgatgagtt ggtccatttt attgggtgaa aacacacctg  2040

tgttatccca gtttgtttag ggacagtggg gtcaagagat ggccaagaac agacagtaaa  2100

aaacaagaca gcgcaacctc ataataaaca ccacatatga cacggctgaa aaatgcaggt  2160

gtgaggggaa gtatgtagcc ttttcctcat catttcagga atgtcagtcc aacttcacac  2220

acacacgctg gcacgtcaca cggccactaa cagcagacac gggtgggctc atcaggcacc  2280

acagcctccc tcggagtgag ctcggacagt gttccgcagc ctgcttccct gcacgtgccc  2340

ccatgggcgt gcatttagga acacccacaa ggagagtttg ggcctcctcc cgctgcctga  2400

gctcacctgc tctgtggggc atagatgccc tcatttcccc agctcctccc atgcacatgc  2460

atttaggaca ctcccaagtg tttgtgatac caacaaggtt gcaatggata cccttagatg  2520

tgcgtgcaca agctcctctg tagagaggat ttctctaggg tgcggagttg ccaggaagac  2580

gttatgagcc ccagtgctaa ctggtaacag gtgagtgccc tccggagggg ctgccctaag  2640

accccgcggt cctgagagcc ctgtgtcccc acgttccaac caggtcgtac ttagtgttta  2700

ccttctgtca atctgaagaa atggcaccct gaagaccagt ggttgccgag actgggggag  2760

ggagggctga acagagagca gaggatttcc agggcagtga acccactctg cgcgatgctg  2820

tagtggtgga caatgctgag atacatttgc ccaaacccac agaagcacgg caccaagagt  2880

aagcccccag tggaccctga gtgatgaggg actgtggacc ctgggcaatg atgacaggcc  2940

catgcaggct cactgactgt aacaaacgca ccactccagg acggggctga tggggggttg  3000

tggggggtgt gcgtgtgtgg gaggaggggt acatggaaaa ttccgcactt ttcattcaat  3060

tttgcagtga acctaaaact gctctaaaaa taaagtttat taataaaaca gtaccttgtt  3120

ttaataggca atgttagttg ctaaggaggc taagttatat gtgtatgagt ttattgttta  3180
```

```
tttctttctt tttctgtgag ctgcctgttc atgtcctttg aacatcttct attgggttgg   3240

ttaccttttt cttagtttaa taagaaatct ttgtatttta agaacattaa ttcttagtca   3300

tatatacagg aattttttc ccaattttc ctccataaat atttgataca catatttcaa      3360

tgtgaaaaaa gttattaaat tgtaccattt tatttattat ggtaacttct gggtttgtgg   3420

catgcttgga gaggctttct ccattgcaaa gtaataaaac tgttctactg ct           3472
```

<210> 495

<211> 3279

<212> DNA

<213> Homo sapiens

<400> 495

```
cccatctcgt gcacgacgcc acacaacttc gaagtgtgga cggccaccac gcccacctac   60

tgctacgagt gcgaggggct gctgtggggc atcgcgaggc agggcatgcg ctgcaccgag   120

tgcggtgtca agtgccacga gaagtgccag gacctgctca acgccgactg cctgcagcgg   180

gctgcggaga agagctccaa gcacggggcg gaggaccgga cacagaacat catcatggtg   240

ctcaaggacc gcatgaagat ccgggagcgc aacaagcccg agatcttcga gctcatccag   300

gagatcttcg cggtgaccaa gacgacgcac acgcagcaga tgaaggcggt caagcagagc   360

gtgctggacg gcacgtccaa gtggtccgcc aagatcagca tcaccgtggt ctgcgcccag   420

ggcttgcagg caaaggacaa gacaggatcc agtgacccct atgtcaccgt ccaggtcggg   480

aagaccaaga aacggacaaa aaccatctat gggaacctca acccggtgtg ggaggagaat   540

ttccactttg aatgtcacaa ttcctccgac cgcatcaagg tgcgcgtctg ggacgaggat   600

gacgacatca aatcccgcgt gaaacagagg ttcaagaggg aatctgacga tttcctgggg   660

cagacgatca ttgaggtgcg gacgctcagc ggcgagatgg acgtgtggta caacctggac   720

aagcgaactg acaaatctgc cgtgtcgggt gccatccggc tccacatcag tgtggagatc   780

aaaggcgagg agaaggtggc cccgtaccat gtccagtaca cctgtctgca tgagaacctg   840

ttccacttcg tgaccgacgt gcagaacaat ggggtcgtga agatcccaga tgccaagggt   900

gacgatgcct ggaaggttta ctacgatgag acagcccagg agattgtgga cgagtttgcc   960
```

atgcgctacg gcgtcgagtc catctaccaa gccatgaccc actttgcctg cctctcctcc　1020

aagtatatgt gcccaggggt gcctgccgtc atgagcaccc tgctcgccaa catcaatgcc　1080

tactacgcac acaccaccgc ctccaccaac gtgtctgcct ccgaccgctt cgccgcctcc　1140

aactttggga aagagcgctt cgtgaaactc ctggaccagc tgcataactc cctgcggatt　1200

gacctctcca tgtaccggaa taacttccca gccagcagcc cggagagact ccaggacctc　1260

aaatccactg tggaccttct caccagcatc accttctttc ggatgaaggt acaagaactc　1320

cagagcccgc cccgagccag ccaggtggta aaggactgtg tgaaagcctg ccttaattct　1380

acctacgagt acatcttcaa taactgccat gaactgtaca gccgggagta ccagacagac　1440

ccggccaaga aggggggaagt tcccccagag gaacaggggc ccagcatcaa gaacctcgac　1500

ttctggtcca agctgattac cctcatagtg tccatcattg aggaagacaa gaattcctac　1560

actccctgcc tcaaccagtt tccccaggag ctgaatgtgg gtaaaatcag cgctgaagtg　1620

atgtggaatc tgtttgccca agacatgaag tacgccatgg aggagcacga caagcatcgt　1680

ctatgcaaga gtgccgacta catgaacctc cacttcaagg tgaaatggct ctacaatgag　1740

tatgtgacgg aacttccctc cttcaaggac cgcgtgcctg agtaccctgc atggtttgaa　1800

cccttcgtca tccagtggct ggatgagaat gaggaggtgt cccgggattt cctgcacggt　1860

gccctggagc gagacaagaa ggatgggttc cagcagacct cagagcatgc cctattctcc　1920

tgctccgtgg tggatgtttt ctcccaactc aaccagagct ttgaaatcat caagaaactc　1980

gagtgtcccg accctcagat cgtggggcac tacatgaggc gctttgccaa gaccatcagt　2040

aatgtgctcc tccagtatgc agacatcatc tccaaggact ttgcctccta ctgctccaag　2100

gagaaggaga aagtgccctg cattctcatg aataacactc aacagctacg agttcagctg　2160

gagaagatgt cgaagccat gggaggaaag gagctggatg ctgaagccag tgacatcctg　2220

aaggagcttc aggtgaaact caataacgtc ttggatgagc tcagccgggt gtttgctacc　2280

agcttccagc cgcacattga agagtgtgtc aaacagatgg gtgacatcct tagccaggtt　2340

aagggcacag gcaatgtgcc agccagtgcc tgcagcagcg tggcccagga cgcggacaat　2400

gtgttgcagc ccatcatgga cctgctggac agcaacctga ccctctttgc caaaatctgt　2460

gagaagactg tgctgaagcg agtgctgaag gagctgtgga gctggttat gaacaccatg　2520

gagaaaacca tcgtcctgcc gccccctcact gaccagacga tgatcgggaa cctcttgaga　2580

aaacatggca agggattaga aaagggcagg gtgaaattgc caagccactc agacggaacc　2640

cagatgatct tcaatgcagc caaggagctg ggtcagctgt ccaaactcaa ggatcacatg　2700

gtacgagaag aagccaagag cttgacccca aagcagtgcg cggttgttga gttggccctg 2760

gacaccatca agcaatattt ccacgcgggt ggcgtgggcc tcaagaagac cttcccttcc 2820

ctgtcctggg tcatgttgtt gccaccctgt gtgacttttg aagctgtaaa atgagcttcc 2880

agggcttggg tggcgtcggg gcagggccgc cgaggctggg aggaagccct tctgcctttt 2940

gctggtgttt ctggaatttg ctttccctca cctctcactt ccttctagaa ggagcttcct 3000

gactggaacc agagaatgca tgtctgtcca cttggtggct gctgggtggg gccgggaaca 3060

agggcccctg accctgtgtg ctggccggga cctgccacca gccccccagc ctgcttcttc 3120

cccttaagct ttgtgcccct ggatgcgcta acattcactc ttgtttgtcc ctggactggc 3180

catgaagtga ggagatggtt atttaaagag aattccctat ttatttgaca aaaaatccag 3240

ttaatatatt aatgtgaaat aaaccctgtt tgcacctcg 3279

<210> 496

<211> 3421

<212> DNA

<213> Homo sapiens

<400> 496

tttcgggaag gagcatgctg aggcctggag tctggtcacg gtcacgtcac cccagggagg 60

cactgagctg ggacttggat tccagtctct cttgaccaag gcctgccgcg tttccactcc 120

gtgacgagga gcgaatgaat aaccaggcac ttggcgatgg tctgcaagtc cccagccccg 180

cacctccctg ggccccagag cgggtgtctc tgaggcttgg aacattccga gcagacctgg 240

ccgggaagcc agcctccccc tcagagaagg ctaaaggctg cacggcccag ctctggcggg 300

agaggaaccg tgattgcagc ctggctcgtc ctttacggaa aaaagaaaaa atccccttgt 360

cggctgcttc ccaggctgtt tcgttccatc cagcgctggg gcttggagag caggagccg 420

ctggcctgca gacacacgcc gccgggcggc tgggttctct ggatgtgggg aaaccgattt 480

ccttctgggg gaactggcag ctgcagccaa gaccgttcca tgatgcccgt catcccggaa 540

ggctgggtct gcctcccgtg gccacacaca cacacacaca cacacacaca cacacacagc 600

cacagcagaa gcagcaaacc ctaaccccac cccaaggccg ttcccactgc tgccggctct 660

cccagaatca tcctgctcct gggcagggag ctgggcctgt gtggcagttc ggtaccaggc　720

aagggtgcag gggcgaggac gaaagaagca gaaggtggag atgtggtcaa ggaagtggca　780

ctgctaggtg agggctgcct gtcacccact gtcccccagt gggattacag agtacggggc　840

accaacaaag acaggcacac agtgatgatt aaagaaagtt caggcctggc gcggtggctc　900

acgcatgtaa tcccagcact ttgggaggcc aaggcgggcg gatcacctga ggtcagaagt　960

tcaagaccag cctggccaac atggtgaaac ccaatttcca taaaaataca aaaattagcc　1020

gggtgtggtg gcacatgcct gtaatcccag ctactcggga ggctgaggca ggagaattgc　1080

ttgaacccag gagggggagg ttgcagtgag ctgagattgc accattgcac tacagcctgg　1140

gccacggagt gaggctccat ctcaaaaaaa gaaagttcaa gaggatgctt gctaaggact　1200

ggggcatgcc acagagggca gggcgcgccc gaaccCCCac catgacctct gaggaggctg　1260

acggggctgg agccgtcaga tgtcactccc gcctgcctgt ccacccaggg atgggtggtt　1320

gctgaacgcc tggcgatggg ggacacctga ctgtgtttgc ctctgcacct ccacgggggc　1380

cagctggagc agactcaaag cccggactcc gtgacatggg aactgggagc ccagctgggt　1440

tgggtggggc ggggtggggg tgcaaagaga agagctcaga cccgcacagc tcagacccac　1500

agtgctgccc tcatgccaca gttgcacaag ctgtgactga tccccaagcc agaaagctga　1560

gctgagaggt caggtgactt gccccaagtc ctgaggcctg tctgctgggc tccaaggtgc　1620

cggcatggct cacagaccca cccctgtccc caacccaggg gtcatgtctg cgtacgccat　1680

gtgtgtccgc tatgatggcg tcgaggtgga tgacagctac tgtgacgccc tgacccgtcc　1740

cgagcctgtc cacgagttct gcgctgggag ggagtgccag cccaggtggg agacgagcag　1800

ctggagcgag tgttcgcgca cctgcggaga gggctaccag ttccgcgtcg tgcgctgctg　1860

gaagatgctc tcgcccggct tcgacagctc cgtgtacagc gacctgtgcg aggcagccga　1920

ggccgtgcgg cccgaggaac gcaagacctg ccggaacccc gcctgcgggc cccagtggga　1980

gatgtcggag tggtccgagt gcactgccaa gtgtggggag cgcagtgtgg tgaccaggga　2040

catccgctgc tcggaggatg agaagctgtg tgaccccaac accaggcctg taggggagaa　2100

gaactgcacg ggcccgccct gtgaccggca gtggaccgtc tccgactggg accgtgcag　2160

tggaagctgc gggcaaggcc gcaccatcag gcacgtgtac tgcaagacca gcgacggacg　2220

ggtggtacct gagtcccagt gccagatgga gaccaagcct ctggccatcc accCCtgtgg　2280

ggacaaaaac tgtcccgccc actggctggc ccaggactgg gagcggtgca acaccacctg　2340

cgggcgcggg gtcaagaagc ggctggtgct ctgcatggag ctggccaacg ggaagccgca　2400

●

```
gacgcgcagt ggccccgagt gcgggctcgc caagaagcct cccgaggaga gcacgtgttt   2460
cgagaggccc tgcttcaagt ggtacaccag cccctggtca gagtgcacca agacctgcgg   2520
ggtgggcgtg aggatgcgag acgtcaagtg ctaccagggg accgacatcg tccgtggttg   2580
cgatccgttg gtgaagcccg ttggcagaca ggcctgtgat ctgcagccct gccccacgga   2640
gcccccagat gacagctgcc aggaccagcc aggcaccaac tgtgccctgg ccatcaaagt   2700
gaacctctgc gggcactggt actacagcaa ggcgtgctgc cgctcctgca ggcccccca    2760
ctcctaggcc cggcagctgc agccccttcc agatgaagac caagcgcccc tcctggggct   2820
gctgcagctt ctggggcctc cacagacccc cctcctgcgg ggcacgctgg cctaagagac   2880
gtggcactga gcctcggctg tcgagagggg acttcccacg gcccatggac ctttgtgctc   2940
ctggggcaga gcctccggca cccagtggcc tcccccagac agagccaccc ctgccgtggg   3000
aacctgtccg tgttcctgcg tggatcctgt gtttgtggct cccactcccc agccccccag   3060
cagcccccag ccgaggggcc cagggcccac agccagcggt ggaggtgtct tgctccgggc   3120
ccgtagccca cgccctctct gggtggcagg gccttctgaa ggaaacttgc aggcgagccc   3180
aacgtggtgg ggggccttcc tccctcagag gccatggggt gagaggggct caggcagcca   3240
aggaggccca ggcgtgctcc ctcttatgga gcccctccca tggagctctc ttcccgccgc   3300
actttctacc ccgggcagag gcgcttgccc acgggacgtt tggggatgga cctcggcccc   3360
cgcccctgca gtcagcgtca gtgctcatct acgttaataa agtggtccta tttatggcgg   3420
c                                                                    3421
```

●

```
<210> 497
<211> 3982
<212> DNA
<213> Homo sapiens

<400> 497
aacctcctcg gtccgcgacg atcctctaga gcactgtgtg tctccccgga cgcgagcccg     60
ctcccctgaa atctgcaaaa tggctgataa tttggatgaa tttattgaag agcaaaaagc    120
cagattggcc gaagacaaag cagagttgga aagtgatcca ccttacatgg aaatgaaggg    180
```

aaagttgtca gcgaagcttt ctgaaaacag taagatactg atctctatgg ctaaggaaaa   240

cataccacca aatagtcaac agaccagggg ttccttagga attgattatg gattaagttt   300

accacttgga gaagactatg aacggaagaa acataaatta aaagaagaat tgcggcaaga   360

ttacagacgt tatcttactc agggcattac acaagggaaa agaaagaaaa attttctatc   420

tacgagtgaa acagatccat ctactttggg agtttctctt cctattggtg agaggttatc   480

tgctaaggaa aggttgaaac ttgaacgtaa caaagaatac aatcagtttc tcaggggtaa   540

ggaagaatcc agtgaaaagt tcaggcaggt ggaaaagagt actgagccca agagtcagag   600

aaataaaaaa cctattggtc aagttaagcc tgatctaact tcacaaatac agacatcttg   660

tgaaaattca gagggtccta gaaaagatgt cttaactcct tcagaggcat atgaagaact   720

tctgaaccaa agacgactag aggaggacag ataccgacaa ctagatgatg aaatcgaatt   780

aaggaataga agaattatta aaaaagcaaa tgaagaagtg ggcatttcca acctaaaaca   840

tcaaaggttt gcaagcaagg ctggcattcc agatagaaga tttcacagat ttaatgagga   900

tcgtgttttt gatagacggt atcatagacc agaccaagat cctgaagtaa gtgaagaaat   960

ggatgagagg tttagatatg aaagtgattt tgatagaaga ctttcgagag tgtatacaaa   1020

tgacaggatg cacaggaaca aacgagggaa tatgcctcct atggaacatg atggggatgt   1080

tatagaacag tcaaacataa gaatttcatc tgctgaaaat aaaagtgctc cagacaatga   1140

aacatccaaa tctgctaatc aagatacctg tagtcctttt gcagggatgc tctttggagg   1200

tgaagatcga gaacttattc agagaaggaa agagaaatac agactagaac tgttggaaca   1260

aatggctgag caacagagga acaagagacg gtaatgaaag agaaaaagat ttagaactca   1320

gggttgcagc gtctggagca caagaccctg agaaatcggt aagggtttct ggcatctttt   1380

aatgtttaat ctttcatcaa atgatcctca aatgtggtgg caggtgggga tagagaatat   1440

tgggagaaaa agagagtaga ccaatttgaa cagtaataaa attaactaaa ttcagttctc   1500

ataaagtgta aattctctta actgttattt ccttgaggta atttttcctt tttcatttgt   1560

gtgtcatttt tttaaagttt aaattagttc tctctgcttt attcacatgt actattccat   1620

gggaaagtta tctgggttaa atttacaatt gatgttaata ttttttcttga atacatcttg   1680

atcacttact tttcttacat tggagtgatt tctgagaaaa ctgacgactt tattttaaa   1740

gcgttttagt aattgttact tattgtaaca ttagagagat aataatctta tttttacttt   1800

aattttgcaa ttctcatcat taagtggaat gaattactca catcattgca gttaagtaag   1860

gaggaggtaa tttattgttt ttaccacaat ttattttttc tgtagttgtt tatgtaatat   1920

●

```
ttatttctaa tacaagtctt gtttcatctt tgaatgatga ttaagacctt taatttcatt 1980

aaaaagctca ttcttaaaaa ggatgcagca acttaaaatt atttacctgt aggcaacttt 2040

tgatttgctt ttacttatgc tgagaatata tcctgtgggt tatctatttg gaaaagtttc 2100

atattgcacc agcatcactc gcagtatgct tctgggttaa cctgataaat cattcctgat 2160

aagataacca tggtaggaaa aaaagaagat aaatttcaaa gctaaatata ttttccttta 2220

tgaatcaaaa gtttcctttt aagaggtgag ctttttaatg taatatgttg gcatgttaaa 2280

ttttgtattt atggttacac tagtgtgtga cagaccttat ttatctttga attgaagctc 2340

ctatacagtg tcaagttgat ttatgagaat aaataagtaa ttggaggcaa cagttacgcc 2400

tttacttttg ggtttacttt tgatgtgcaa atcttagaaa agggcacata agtgatgttc 2460

taaagtagag attagcaaag tgtggcctgt gaccaaattt gtttgctacc tgttttcata 2520

aaaaaaagtt ttattgcagc acagccttgt tcattccttg acatactgtt tgtggctgct 2580

ttagcaccat agctgagtct gctcattatg aagagactat gtagtcttgc aaatcttaat 2640

ctatttactg tctagccctt tacagaaagc atttgctgac cctgttttac agaatactat 2700

aacagaaatg gcaattagag aagtagcacg gtgtcctagt acataaaaag aatactacag 2760

cctgatagac taaagcagtt tagtgtggca ccaagacact ttgaagagat gataccacct 2820

gaaagaccca gaatagcttt ccagacacct ctccctcctt tatctgcccc atctgtccca 2880

cccatcccat cagttcatcc tgttccttct caaaatgaag atttgcgcag tggactcagc 2940

agcgcccttg gtgaaatggt gtctcccagg attgcacctc tgcctccacc tcccctacta 3000

ccacctttgg ctactaacta tcgaactcct tatgatgatg catactattt ttatgggtcc 3060

aggaatactt tcgatcccag tcttgcttat tatggttcag gaatgatggg cgtacagcct 3120

gcagcttatg ttagtgctcc tgtcacccac caactagcac aacctgttgt ggtctccctg 3180

tgttgcccag tgtgatcttg aactcctggc ctcaagcgat cctcttgcct cagcctccca 3240

aagaatacgg ttggacagaa tgaactgaag attacaagtg atcaagtgat aaattcagga 3300

ttgattttg aagataaacc gaaaccttcc aaacagtcac ttcagtctta ccaagaggct 3360

ttgcagcagc agattcggga aagagaagaa agaaggaaga aagaacgtga agaaaaagaa 3420

gaatatgaag ctaaattaga agctgaaatg agaacatata atccctgggg aaaaggtgga 3480

ggtggtgctc ctctcaggga tgcaaaagga aatctgataa ctgatttgaa taggatgcac 3540

agacaaaata tagatgccta ccataaccca gatgcaagaa catatgaaga taaaagggct 3600

gttgtatctc tagacccaaa tttagccact tcaaatgctg agaacctaga agatgctgca 3660
```

aataaaagct caggtcatat gcaaacacag agctctcctt ttgctcggggg aaatgtattt 3720

ggtgagcctc caactgaact tcagattaaa cagcaagaat tatacaagaa ttttcttcgt 3780

ttccagattg aggaaaagaa acaaagagag gaagcagagc gagagagact gagaattgca 3840

gaagaaaaag aagaaagacg gcttgcagaa cagagggcac gaattcagca ggagtatgaa 3900

gaggaacagg aaaagaaaag agagaaagag gaggagcaaa ggctaaaaaa tgaagagcat 3960

attcggttag ctgaagaaag ac 3982

<210> 498

<211> 3603

<212> DNA

<213> Homo sapiens

<400> 498

ataattttga cccaaacttc aataaaactt ttagttttta gagctgtggc tgtcaggatt 60

gtgggtcaca gattgtgggt cagtgccatc tatctgctgc caactaccaa attcaggtct 120

taagcttgga ccttcccccc gaacttcaga tctgtagatg cagctgtccc cggctgtctc 180

acagatgtct ccgacatggc cagtgcaaac ctgctcctgt tcaccccacc caccctgttc 240

tgatcaccgt cttctgttca gccaagggca gctccatgtt taggtcaggc cagaagtctc 300

catgcaatcc ctgcctcccc tccttatctc acacactacg tgcaatcccg cagcaaatcc 360

ttttggctct atcttcaaat tacattcaga atctgaccaa ttcccatcac ctccactacc 420

accacccctt cccagccacc atcatcactt gtctggacta ttgccatagg ctcctaagtt 480

gccttcctgc gtcctcatgg gtgcctgaag tttattctcc atgcagccac cttttaaagt 540

gtgagtcaca gcatctcact gctctgcagt ctctcctctg gcttcccatc tcactcacgg 600

ccaaagccaa agcacgtgcc aggccctggc tctctgacct catctccaac tgccctccac 660

actctgctcc agtcacaccc gtctgcttca actactggca aagaccaagt cttcccctac 720

ctccatgcct ttgcatctgc tcctctctct gcaccagtcg ggctggcttt ttcgatgatc 780

agggctttcc tggatcaaag atgatacaat tcttacgtgt gtttgaccaa aatatcatat 840

ggaaatctaa tatctaggat agaagatcat aaatgaagga tctattctga cattcagagc 900

```
ttgaacagtt ttcagatcct ttctgctgtg tgcttcagga aatatcttcc cttgtggttc   960

agatcgtggt gtgggcttga gcatatgtga gtctcatttg ttgtccagct gtatgagccg  1020

gaattgttca tttttaaagg cctggacttc ataaatcatg tagaaaacaa gcacagatgt  1080

ataaggagag ttgcccattt tcagagaata gatagtccgt gcttccatat ataatttgta  1140

cttcaaaact tatgtattac ttagttacag aataaaagcc agttggacag tttagtgcac  1200

cattagatta catgttaagg caggttctat cccagaaaac agaaaatcat gtcctccttc  1260

ttatttacat cttgttcatt gttttgatat aaaatctaaa agtcttaaaa atttgattta  1320

taccttcaaa attcaacaca gagtcaactg attaatattg gattaaaggg aaatgtcact  1380

gactttgaca tacctaataa attctgtttt actttatgtt atataaattt gagacttatg  1440

cttcgtttcc ttagagcacc agcatttttc ttttttcctt ttttcctgtc ttataaagaa  1500

ctcgagacaa ataggagaat atattccagc agattcctgt acatacaaag atagtgactc  1560

tgaatagctg gatgataggc actgtatggt catatcatag cagaaatgtt tgcccattcc  1620

tgatcaatga agtctgctgt tatgacagtt tgttacatga aaggtagtta aaaggtaaca  1680

ttgtctggaa tataaaaaat gtggactgcc tcacctcaca aaagtggagg aacaccatca  1740

tatagaggag attcgatcaa agcaaaggat ttttcaatta gattaaaaat ctgttgaaaa  1800

ctctattgat aatcccaact actcgggaag ctgaggcagg agaattgctt gaagccagga  1860

ggcggaggtt gcagtgagcc aaggtagcac cactgctctc gagtctgggc aacagagcga  1920

gactccgtct caaaaaaata aaataaaaat ctattgagct attgaagctt ttccttaata  1980

tgttcaaact gtatccaact aagaaataca cttgactact taccactcag aattggtgat  2040

tatgatagag tagtgctata attatttgac caggaaatta tacttttcaa gatatatgaa  2100

aatttaaaat aatttgtctc atttttaatt tgtaccttaa agaactgaaa atcaggatga  2160

ctgagtttct tttcttttct tttttttcagc tgtaggcaat ttactcaggt actttaatgg  2220

attgtttaac ctcattatgc ctcagtttcc ttacctataa atgagaggag tgaactacat  2280

aatgttctta aagcaaaaaa ttacttattt ttaacaaaaa agctatagta gaaggtagaa  2340

gaaaagtaga aagttgagaa actatagata cttaaaaga aaaaaattat tccactattc  2400

cacaaacacc tttttcttta gcatatgtac ctaccacata cttattttag ttttacaaaa  2460

ttggatcata gaatatatgt tcctttataa tctcattttc tcccattgaa tacaatattg  2520

tgaatatctt tgcatgttat tacatataat tcaacaagtt ttttttttcat gatggcatgg  2580

tagctaatgg tttgaatatg ctacaattta tttaaataat tttattatta ttgaacaatt  2640
```

```
ggtttctaat attacactct taaaaattct gtaatgatta ttcttatagt taaatctttt    2700

cacatatgtg tgatttgaga taaattccca gaagtggaat tgcaagatta aaggattttt    2760

gtcatgtaag gccaaaacat tctttataaa ttttgtgtca atttacattt cgtcggcagc    2820

gtataatagt gtttgtttct tccccattct cataagtact gcataatagt acttcagatg    2880

acatattttg gagcttctat tcaaggtggt cctggagaaa atgagttttg gggttttttgt   2940

ttgggtttgg ttttgcctgc ttaagacccc atataaatta cagaaaagga gaaaaggggg    3000

aagtctgtat taaccaagtg ggcagaaaga ggccatcatc aaactatttc agagaatttc    3060

tgggagatga aagtagaagg tggggtggca gctaatgaag cagaatagag aactctggag    3120

ctagagccca gaacatgtgc agagggcaca ggaacctagc atagagcagc ttctctgcag    3180

gaccctaaag ggctccaggc ttggacactg tacttacccc aggtaaaaac aagtgacctt    3240

tggaaagtct gtatgtggaa ccatatgctc cccactgtca ctatggaagg gcctaacttt    3300

cacataaaaa attggaaggc tcggccgggc gcggtggctc acgcctgtaa tcccagcact    3360

ttgggaggcc gaggcgggcg gatcacgagg tcaggagatc gagaccatcc tggctaacac    3420

ggtgaaaccc cgtctctact aaaaatacaa aaaattagcc gggcgtggta gcgggcgcct    3480

gtagtcccag ctactcggga ggctgaggca ggagaatggc gtgaacctgg gaggcggagc    3540

ttgcagtgag ccgagatcgc gccactgcac tccagcctgg cgacagagc gagactccgt     3600

ctc                                                                  3603
```

<210> 499

<211> 3562

<212> DNA

<213> Homo sapiens

<400> 499

```
ctttggaagg agctcaagtg attctgtcct tagtttaatt gtagatggga tggatccatt    60

tgggtatctc tgcccttggt tagttaacat tatgcttgaa aaacttgggc ttgaacactt     120

ctaggtagta gccttttttgc agtgataaga agttctgttt gtccttgttc ctagttctgc    180

ctacattcca gtctctcacc taaatttcag aatcagaatg agatttatca ggatgttgtt    240
```

●

```
ttgaaaatat gtatacacaa tcattattca tattactgtt actttattgc tttttagatg   300
acttacctgt aatttttttt ttcttccaca gtcctttgtt cccgatttct gctctgtcac   360
ttccctctcc tggcaatgaa cttggctgcc gcaggcaggg ggcagggcca gggaatgaaa   420
ttccagagca gaaagaacaa agtcagatat ctcaaaatat catcctgccc catttaatct   480
gggcctttta tccatgtgga tgcccctttc taaacagcac ctgcgctggg ctgcgaggcc   540
cctgcctgcc tgctgctggt tgggcagggc agatacacct ttctccacct gaggactgcg   600
ttctcaggta atctggctaa agcaatattc cctccatttt aggcattctt agattgcttt   660
tatgatttgt gctattttac cataccacat gtaattttta cttcatgctt ttgtgtaaag   720
caactttttc tcttttgtt tattttttat tgtggtaaaa ttcacataac ataaaattcg   780
ccattttatt ttcctgcccc ccccttccaa aattcaccat tttaaagtat acaattccgt   840
agcttttagt acatttacag tgttgtggta ctgttaccac tacagttcca aagcattttt   900
catcaccaca gagggaagcc cccattaagt aataattccc tcctcccatc ccctggatcc   960
tatttctatg gatttgtcta ttttggatat tttctataag tggaatcata aacatgtggt  1020
cctttgtgtc cggcatcttt cacttatgtt ttctccatta ctgccgcctt ttgtgtttga  1080
ttttttttct agtattttga ctcccttatt ccttttaag tatctatttt atcttcttac  1140
ctatctttaa aggaaatttt atgtgacatc cattataact taaatattta cttaatctat  1200
attaaataca ggattattaa aatacaaagg aacactgctc aaaagaaatg tcattttttt  1260
ttaatgtcat tttttttttt tttttggaga cggagtctca ctctgttgcc caggctagag  1320
agcagtggca tgattacagc tccctgcaac ctctgcctcc cgggttcaag cgattctcct  1380
gcctcagcat tccaagtagc tgggattaca ggcacacgtc accattccca gctaattttt  1440
gtattttag tagagacgag gtttcaccat gttggtcagg ctggtctcca actcctaggc  1500
tcaggggatc cgcccacctc atcctcccaa agtgctgggt tacaggttga gccaccgtgc  1560
ctggcctgaa atgtcatttt taagcttagt gtctaatgac atgttttgtg ttgttttgct  1620
gattaataa ataaggccag atactgacat gaaacagtgg tttagtaatc ccttatctac  1680
tccagaaagc tgaaggctga ggaaggacat gcacattccc tcacaggtgt cacatgaaaa  1740
atcttcccta tcctgtagga cttaaaaggt cgccttggat gcccacatgg acaatacatt  1800
ccaggtggaa ggttgcagat tgtagggaat agtgtcacca cctttgttgt gcatccatga  1860
caccttatat aatctcttgt gcacatgtat tagagggtgc tccataccaa tctagatcag  1920
gatccaaatc agacactagt gcaggaaaga agtgaagctg gccaggaggt ggcagcaaca  1980
```

gttcagccca aggcaagtgc tgctgggcag aatgaaggtc cagcgtggcc aagtcttcct 2040

gatctttcag gggcaaagga aatctggatt tttaatatgt ggggtgttaa aatatacata 2100

tattatcata tataaaacat acatatatac atgtttctgc acagttcctg gcttataact 2160

cctctagccc ttgttacagt cttttaggtg tgttaagcct caggggcagg cctcaggaaa 2220

caatctctca gagttctcct gccctccttt caccagtccc aaagcaaaat cctaatctcc 2280

ctcctttttc tttttttattt agggacaggg tcttgctctg tcacccaggc tggagtgcag 2340

tggtgtgatc atagctcact gcagcttcaa actcctgggc tcaagtgacc ctctctcctc 2400

agtctcctgg gtagctgggc ctacaggcac ctgccaccac ccacccccta ctgactaatt 2460

ttttcaaatt aaaaaaattt ttacttttgt aaagaccggg ttttgctaca ctgcctgggc 2520

tggtcttgag ctcctgagct cagggaatcc tcctgccttg gcctctcaaa gtgctgggat 2580

tacaggtgtg agccactgag cctggccgtt ttttttttt gagacggagt ttcactcttg 2640

ttgcccaggc tggagggcaa tggcgtgatc ttggctcacc acaacctccg tctcccgggt 2700

tcaagcgatt ttcatgcctc agcctcccga gtagctggga ttacaggaat gtgccaccag 2760

acccaggtaa ttaagcattt ttagtagaga tagggtttct ccatgttggt caggctggtt 2820

tcaaactcct gacctcaggt gatccgtcct cctcggcctc cctaagtgct gggattacag 2880

gcgtgagcca ccacacccgg ccttattttt ttttattttt tattttttgt gagacagagt 2940

ctcactcttt cacccaggct ggagtgcagt ggcacgatct cagctcaata caacctccgc 3000

ctcccaggtt gaagcaattc tcctgcctca gcctcccaag tagctgggat tacaggcatt 3060

cgccacaatg cccagctaat tttgtatttt tagtagagat ggggtttcac catgttggcc 3120

agggtagtct agaactcctg acctcaagtt atccacctgt ctcagcctcc caaagtgctg 3180

ggattacagg cgtgagccac tgtgccaggc aaatgctgcc attttaagac ctacactttg 3240

ggtaccaaag gtaaagatgt tgaccctaaa tacttgggaa gcctggggcc agtgataaat 3300

ataaaaattg gtatgaaaat ttagtaatga gctttgtatt gtactcatgc ttaaagttat 3360

attttccata gcatcagtct tttcaaattt gccttattca acacattaag gatgctacaa 3420

cttatgctat taaaacctca taggctgggt gaggtggctc acgcctgtta atcccagcac 3480

tttgggagac ccaggtgggt ggatcacttg agcccaggag ttcaagacca gcctaggcaa 3540

catggtgaaa ccccatctct gc 3562

<210> 500

<211> 3595

<212> DNA

<213> Homo sapiens

<400> 500

aagcggcatc	gcggcggcgg	cagcggcggc	ggctacaccg	ggcttggccc	cctccctcct	60
ccgttccccc	ctcctcccCc	ctcccctcag	cggtggctcc	caagaagtcc	gagacacgcg	120
gtgaggcggc	gacgggctcc	gggtgagggt	ctctggagtg	tgggcgccgt	ttcctgggcg	180
cagagggaga	gcttggggtc	ggggggaggt	gagagctgag	gggcgaatgt	ccctggcgcg	240
ggcgggagag	cgcgctctcg	gcccggcccg	caacttgatt	cctaactctg	acctgccgcc	300
cggcgcgcct	tggcctgagg	gtcggccgtg	tggggacctg	gagccgccct	ccttgcgacc	360
gctgtcggag	gagtccggcg	cccgctgttc	ccctcgcctc	gcctttcgcg	gcggagggtc	420
ggagcctgct	gccctctgct	caccttcggg	tgcagttgct	ccagctccct	gcccgcggag	480
aggatctgcc	cgcccctctt	cgtctcttgt	ctgtttttat	cacttctagg	aatttgtttg	540
gtggaggctt	gggatgggct	ctctcagcgc	tactttcaca	gtgactgggg	tggggaagag	600
ttccctcacc	tttttcaggt	ggcgcgtcag	gcagcctgct	tggtacctgg	agccctgttt	660
tcccaagccc	ccgtccgtca	gtgttcgctt	cttctaaaat	taccgatgac	agggttataa	720
atcagttttt	aggggggctcg	gagagagttt	gggttggaaa	ctgttagctc	ttttttcctc	780
ctggcttttg	atcttgattt	aagcgtttgc	ctctgaaatt	ttgacaactt	cataagatgg	840
tccaaaagtg	aattttggta	gaaagattta	aatgcacagt	tgggatttta	tgggggtacg	900
gtgacttcat	tgcaggttgt	tgactttttt	tttaaaataa	gatgttcttt	taatttttg	960
actctgggtt	tctgagcctt	ggttattgtc	ccccatttct	gttccaaaag	cagacttttt	1020
tttttttttt	atcacccctt	cccctcaccc	agagaatccc	tttaaacgcc	aagaaagctg	1080
tcataacatt	tagcattatt	tgatcacaga	acttttccaa	atgaaatgct	aaaaattcct	1140
tcagaaaaaa	gcatccatct	acccatagca	ttatttttg	ggggaggct	atacgtcttg	1200
tcagttctga	aagtttgaag	tgacctctta	tcaaaggcca	cccttatgtc	tccttaaacg	1260
actcttaggt	aattcctaga	tgttttcatc	cgttctgata	aatttgttgt	cagagtgttg	1320
attgtgatga	tctgcaacta	aaattatttc	atcagtaaag	atttccacac	atgtggcagc	1380

tgcttgttgg tgaattatga aatttgaaaa aattgcaaat taaatgtgaa aggcatattt 1440

cttttaactt ctgattgtaa ctgtctgtcc tccagtatac gttcctatct agactttggt 1500

ctgcttagca gatttcctct tttcacttga cactaggaat gggagtagga tttccagagc 1560

ctaaaagaga gtttgttttt tttttctatc cctaggctcc ttgtatgaat ttataaataa 1620

atggtttttt ctatcaatag tatcaattta gctggtgcac tttttttttt tagtataaat 1680

cacattttgt ttcctaaaat gaaaataatt ttgttttatt ctttatttca gggattgaca 1740

gattttaaag cctgcaggcc cagtcctgcc agttgcctct ttttgtaaat aaagatttga 1800

ttaggcctgg tgcgatcgct cgcgctggtg gtcccagcac tttgggaggc caggctggtc 1860

tcgaactcct catgtgatcc gcctgcctca cccctcaaag tgctgggatt acaggtgtga 1920

gcaactgtgc ccagccctgt aatctgcttt tttaagaagt atttcattat ttgtatttgg 1980

attttgattg cttttgtatt ttctgcattg gaggtctttc tagaaagggg cttatgaacc 2040

gggttttcat gattagtctt accagtcaag atttaaaaag aaaatccagg aataataaat 2100

gcttggtaat gaagatgctg gttaacattt attgagcact tactatgtac tagacaattt 2160

ccactacttt acgtgtatga aattatttaa ttgctgtggc agctctgtga gtgtatacta 2220

tgatttctgt tttacaggtg aggaaactaa ggcaaggaga aaaattaagt aactgttgga 2280

agtttatcag ctagcaaatg gtggagctag gatttgattt catgcagtct gatttgagaa 2340

acccaaattc ttaacaatat gctacagagc ctctacttac attattgctc agtgtagaaa 2400

gtttagacag tccagagata tactgtcatc ccttggtgtc tgtagggact gcttctagga 2460

cctttggtga atatcaagat gcacagatgc tcaaatctct gatataaatg gcatagtatt 2520

tgcatataac ctgtgcatat cctcccaaat actttatatc atttctagat tacttataat 2580

acctaataga atataaatgc tatgtaaata gttgttatac tgtattgttt ggggaataaa 2640

gacaagaaaa aaaagtctgc atgtttcaaa tacagatgct atattaaact ttttggatcc 2700

aagcttggtt gaatccacag acataagagc ccatggatat ggagggccaa ctgtataatg 2760

taaaaaaatt ccttctcatg cgctagtttc cagttttcat cctttgtaga taaccagggg 2820

caacagtttg atataggtct tttcacctct ctttgtgtgc atatacaagt aattatttgc 2880

agatttgtct gcatattcag aatttaaaaa ttacactttt ttttagcagc tttagatgta 2940

cagaaatttg agccgatagc acagaaagtt cccatattcc cttcccttcc ctcgtttctc 3000

ctattgcaaa catcttgcat taatttggca catttattgc atttgatgag cccatatcaa 3060

tatgttgtta tttattggtc tatagtttac atagggctta ttctttgtgt tgcagttttt 3120

tttttttttt gttttgtttt tttaagatct cactctgtat ctcaggctgg agtgcactgg 3180

tgccgtcatg gctctgcagc ctcgacctcc cgggctcaag cgatcctccc accttagcct 3240

cccagagtgt tggggttaca gacatgagcc actgcacttg gccgagagtt attttttaca 3300

aaaatgggat caagcccagt ggtggcttgc gcctgtagtt ccagctactt gggaggttga 3360

ggtgggagga ttgcttgagg ctaggagttt gagaccagtc tgggcaacac agcatgactc 3420

tgaccagtct gggcaacaca gcatgactct gtctctaaaa aaaaaaaaa agtgggctga 3480

gggtggtggc taacgccggt aatccttgca ctttgggagg ccagggcagg tggatcacct 3540

gaggtcagga gttcgggacc agcctggcca acatgaatga aaccccctct ctacc 3595

<210> 501

<211> 5633

<212> DNA

<213> Homo sapiens

<400> 501

tgcgatgttt acaataagct cagatcaaag gatgcttaca aatagacagc taagtagaca 60

tttagtggga ctctggacag ctgataatgc aactgcaaca aacttgttga aacgcatttt 120

gccgccaggc ttgctggcat acttggaaag ctcagatctc gtacctgaga aggatgctga 180

tcggatgcat gttagagaca atgtgaaaat agcaatggat cagtatggaa aatttaataa 240

agttccagag tggcaaagac tagctggaaa agctgctaaa gaagttgaaa aatttgccaa 300

agaaaaagtg gatcttgtat tgatgcactg gagggatagg atgggcattg ctcaaaaaga 360

gaatataaat cagaagccag tggttcttcg aaagagaagg caaagaataa aaatagaagc 420

aaattgggat ctcttctatt ataggtttgg tcaagaccat gccaggtcaa accttatttg 480

gaatttcaaa acacgagaag aactgaaaga tactcttgaa tctgaaatga gagcatttaa 540

tattgacaga gaacttggaa gtgcaaatgt gatctcctgg aaccaccatg agtttgaggt 600

taaatatgag tgcctggcag aggaaattaa aataggagac tattacctga gattactatt 660

ggaggaagat gagaatgaag aaagtggatc aattaagaga tcgtatgaat ttttcaatga 720

gctttatcat cgcttcttgc tcaccccaaa agtaaacatg aagtgtttat gtttacaagc 780

ccttgctatt gtttatggca gatgtcacga agaaatagga ccttttacag ataccagata 840

tatcattgga atgttagaga ggtgcacaga taaacttgaa cgagataggt tgattctctt 900

ccttaacaag ttgatcctta ataagaaaaa tgttaaggat ctcatggatt caaatggaat 960

aagaatcctt gtggacttgc ttacccttgc acatctccat gtaagccgag ctacagtacc 1020

actgcaaagc aatgtaattg aagctgctcc agatatgaaa agagagagtg aaaaggaatg 1080

gtattttggc aacgcagaca aagaaaggag tggcccgtat ggatttcatg agatgcaaga 1140

attgtggacc aaaggaatgt taaatgcaaa aaccagatgc tgggctcaag gcatggatgg 1200

atggcgacca cttcagtcca taccccagct taagtggtgt ctcttagcca gtggacaggc 1260

tgtcctgaat gaaactgacc ttgctaccct tatattgaac atgttgatca caatgtgtgg 1320

atattttcca agcagggatc aagacaatgc catcattcgg cctctaccca aagtgaaaag 1380

actgctgtca gatagcactt gccttcccca tattattcag ctactgctga cctttgaccc 1440

tatccttgtt gagaaggttg ctattttgtt ataccatatc atgcaagata acccacagtt 1500

accccgcctt tatctgagtg gagtattttt ctttatcatg atgtacacag gttccaatgt 1560

gcttcctgtt gctcgatttt tgaaatacac acatatcaaa caggctttca agtcagaaga 1620

gacaaaagga caagatattt ttcagagaag tatacttggg cacattctac ctgaagcaat 1680

ggtttgttac ttagaaaatt atgaacctga aaagttttct gagatttttc taggagaatt 1740

tgatactcca gaagcaatct ggagcagtga aatgaggcgc ctgatgatag agaagattgc 1800

tgcccatctc gcggatttca cacctcgtct tcagagtaac gcaagagcac tttatcagta 1860

ttgcccccatt cctataatca actatccaca actcgaaaat gaactatttt gtaatattta 1920

ttacctcaaa caactgtgtg atacactccg gtttccagat tggccaatta aagacccggt 1980

taagcttcta aaagataccc ttgatgcctg gaagaaagaa gtagaaaaga agccacctat 2040

gatgtcaata gatgatgctt atgaagtgct taatctgcct caaggacagg gaccgcatga 2100

tgagagcaag attaggaaag cttacttcag acttgcacaa aagtaccacc ctgataagaa 2160

tccagaaggg agggacatgt ttgaaaaagt aaataaagca tatgaatttt tatgtaccaa 2220

atcagcaaaa atagtggatg ggccagatcc agagaatata attttaattc taaaaacaca 2280

gagcatcctc ttcaaccgtc ataaagaaga tttacagcct tataaatatg caggataccc 2340

catgcttatt cggactataa caatggaaac ttcagatgac ctccttttct caaaagaatc 2400

accattgttg cctgcggcta cagagctagc tttccatact gtcaactgtt cagccctcaa 2460

tgctgaagag ctcagaagag agaatggact agaggtgtta caagaggcat ttagtcgctg 2520

tgtggctgtc ttgactcgtt ctagtaaacc aagtgacatg tcagtacagg tgtgtggata 2580

cataagtaaa tgctacagtg tggctgctca gtttgaggaa tgccgagaga agatcacgga 2640

aatgcctagc atcatcaagg atctctgtcg ggtactatat tttggcaaga gtattccccg 2700

cgtagctgct cttggggtag aatgtgtcag ttcttttgct gtggatttct ggctacagac 2760

acacctattt caggctggaa ttttgtggta tctccttggt tttctgttta attatgacta 2820

cacactagaa gagagtggca ttcagaaaag tgaagaaaca aaccagcagg aggtagcaaa 2880

cagccttgcc aaactgagtg tccatgctct gagtcgcctt ggagggtatt tggctgaaga 2940

acaagcaact ccagaaaatc caaccataag gaaaagctta gctggcatgc tgacaccc ta 3000

tgttgctaga aaacttgctg tggctagtgt gactgagatt ttgaagatgc ttaacagcaa 3060

cacagaaagt ccatatttga tatggaacaa ttctacaaga gcataattac ttgaatttct 3120

tgaatcccaa caagaaaaca tgattaaaaa aggtgattgt gacaaaactt atggatcaga 3180

atttgtctac agtgatcatg ccaaagaact tattgtaggg gagatttttg ttagggtgta 3240

taatgaagtt cctactttcc aactggaggt tccaaaagca tttgctgcaa gtctcttgga 3300

ttatataggc tcgcaggccc aatacttgca cacattcatg gccatcacac acgcggcaaa 3360

agtggagtca gagcaacatg gagatcgctt accgagagta gaaatggctt tggaggctct 3420

gagaaatgtc ataaaataca atccaggttc tgagagtgaa tgcattgggc actttaagtt 3480

gatattttct cttctccgag ttcatggagc tggtcaagtg cagcagttgg ctttagaggt 3540

tgtgaatata gtgacatcta accaagactg tgtcaacaat attgctgaat caatggtttt 3600

gtccagttta ttggctcttc tacattcatt gccatcaagt cgtcagcttg ttctggaaac 3660

tctttatgct ttgacatcga gtacaaaaat aatcaaagaa gcaatggcaa agggtgcttt 3720

gatctattta ctggatatgt tctgcaattc aacacatcca caggttcgag cccaaacagc 3780

agaacttttt gccaaaatga cagcagataa actgataggt ccaaaggttc gaattacgtt 3840

aatgaaattt ctaccaagcg ttttcatgga tgctatgaga gacaatcctg aagctgctgt 3900

acatattttt gaaggaactc atgaaaatcc tgagttaatt tggaatgata attccagaga 3960

taaagtgtcc acaacagtta gggaaatgat gctagagcac tttaaaaatc agcaggacaa 4020

ccctgaggca aactggaagt tgcctgaaga ttttgctgtg gtgtttggag aagcagaggg 4080

tgaacttgct gttggaggag tcttcttgag gatctttatt gcacaaccag cctgggttct 4140

aagaaagcct agagaatttc ttattgccct gttagaaaaa ttaactgagc tcctagagaa 4200

gaacaatcct catggagaaa ctctggaaac cttgacaatg gcaacagtgt gtctcttcag 4260

cgcacaacct cagccggcag atcaggtccc gccattgggc catcttccca aagttatcca 4320

ggcaatgaat cataggaaca atgccattcc taagagtgcc attcgggtta tccatgcctt 4380

gtctgaaaat gagctgtgtg ttcgagccat ggcatcttta gaggccattg gcccactgat 4440

gaatggaatg aaaaagcgag cagatactgt tggtctagcc tgtgaagcaa ttaatcgaat 4500

gtttcagaag gagcagagtg aattagtagc acaagccctg aaagcagatt tggttccata 4560

cctcttaaaa ttactcgaag gcattggcct tgaaaacctg gacagcccag cagccactaa 4620

ggctcagatt gttaaagctc tcaaggcaat gactcgaagt ttgcagtatg gagaacaggt 4680

gaatgaaatc ctgtgccgtt cttcagtctg gagtgccttc aaagatcaga aacatgattt 4740

gttcatttct gagtcacaaa cagcaggata cctcacagga cctggagttg ctggctacct 4800

taccgcaggt acatctacat cagtcatgtc taacctgcca cctcctgtag accatgaggc 4860

aggcgacctt ggctatcaga cttgaaatat tcacgagaga caataaacgc tgaaaggcca 4920

gtgccaagtc cacattcctc cagctgatac gttgaagcaa actcttactg cctttctcct 4980

ggtttcatga cagtgttatt cctttttcta taaatatatt tttaggaaaa aaagtcagtg 5040

atcctaattg tatcacatta taagaaagca ctctgtggat caacataagt gggtacacaa 5100

gaattttttt ttttcttggt gtatgtaagc acatttgttc ctttatatct gtttacaaaa 5160

ctgtgaatca aaaagacaaa actttcttcc tagttttttgt aatttttttt ttgaactagc 5220

atgactgtag ggttgagcta cagtcaacaa aaattgggct aagtcacttt tccccaggaa 5280

agaatatttc cctctcctgc atcaagtctg cgtggccatc ctcccccac catccaagac 5340

tattaggttt tgtccctgca cccttcactg gcatcctcaa tcattaacct tctgaaagct 5400

cacagtacac attagtatgt ataactggct ttaccaaatt gaatgaaaag gagcttgtgc 5460

aaaaaaattt aaaaatggat gtcaagatgt tatgtaaaag atgagtgtaa ttgtgaaatg 5520

ttctatacac tatcaaatat ataaagcttt ctatattgaa tgtacattat acagatcatt 5580

catatgtgta cataaaattt taaaaataaa gggaattgac tgctttgtta atg 5633

<210> 502

<211> 4449

<212> DNA

<213> Homo sapiens

<400> 502

```
atgagccttt ggaggaacta gtaactggta aaatacatct ctggaagcat tttaagtaag      60
tgcccctct aggtagatag tgacctactg tggagtggag agaacccct cacaggcaca     120
tgtgccccct gagagggcct ttgtgcagta cacaacttca caacggtata taatgaccct     180
agatagatga ccagcagtga cagtgatacc cattgctgca catctgtatt aatctctgtg     240
gtcccctcct ctcttcccca ggcctctctg ctgatggtgg tgccaagcgc caggagcacc     300
tatcccgatt ttccatgcct gacctcagca aagactctgg aatgaatgtg tctgagaagc     360
tgagcaacat gggcactctt aactcgtcca tgcagttccg gagcgcagag tcagttcgca     420
gcctgctctc tgcccagcag taccaggaga tggagggaaa cctccaccag ctcagcaacc     480
ccattggcta cagagacctg cagtcccacg gaaggatgca tcagagcttt gattttgatg     540
gagggatggc gggcagcaag ctgccagggc atgagggcgt gaggatccag cccatgagtg     600
aacgcacccg gagaagagct acttcacgcg acgacaaccg ccgtttccga cctcacaggt     660
ccaggcgttc ccgacgctct cgctccgaca acgccctcca cctggccagc gaacgcgagg     720
ccatctcccg gttaaaagat aggcccctc tgagagccag ggaggactat gaccaattta     780
tgcgccagcg gagcttccag gagagcatgg ggcatgggtc ccggagggac ctgtacggcc     840
agtgccctag gactgtgtcg gacctggctt tgcagaatgc ctttggggac cgctggggac     900
cctacttcgc cgagtatgat tggtgttcca cctgctcctc ctcttcagag tctgacaacg     960
agggctattt cctaggagaa cccatccccc agccagcgcg cctgcgatac gtcacaagcg    1020
atgagctgct gcacaaatac agctcctacg gcctcccaa atcttccaca ttaggtggca    1080
gaggacagtt gcacagcagg aaaagacaga agagcaaaaa ctgtatcatt tcttaatatg    1140
attgggatca gggaatggga gaagatggga gctaagaatg taaagtcaga aacttgcact    1200
gttttaaatg ttaaagcgct tttggggggtg gcttatgggg gagaaaaggg aaaatgctgt    1260
cagtagatgg aggcaaggtt acaggttgac tcaataggta gtcacagttc ttggcatgtt    1320
gaatattatt tgcacatttc actttggaaa cacagtagac tctatcgagg ccaggcttgg    1380
tcacttcctt cccatcagtt ctgtgttgag ttgccatctc tcaagatggt aaattgtttc    1440
ctgctcgctt ttatcctctc tggttctctt acttttagga cccttttttc agtaagtaat    1500
ttgtttatta gccaggaccc aagactaagt tatttacatg tccattgtaa atgcaatgta    1560
aatgagagtt ctgataaaat atttttgtat tttgtaatat caaaggaatt tctatatcgt    1620
```

aggactcagt gggggacttgc atgcacatcc accattgtct ctgagtagta ttgaaatgtg 1680

gcccggtacc acctttttttt tttttttttt tttttctata caaatttgtt acatgtcagt 1740

gagacctttt tcaaaggaac atattcaatt tggctttttg tggctgaaaa aacataactg 1800

ttagacccaa agcattttat gctccgttcc atcttaagga gccatcctta agtctgctcc 1860

caccctcagt agaatttatt ttctacaaag tggtagtaat ttttttttaa attgcaaatg 1920

taatttttgc caattagaga aaccaaccgg tgtcagtaaa attctgtgag aaatgccatc 1980

cctgctggga atgttgaagt tacttaatgt tgatctatcc cttggggaaa gtaaaagtga 2040

ctgtgagtgg tgccattgtg tgatgtcagc atgacgttgt tttgaatgtg gcattatgtt 2100

ctggtgctca tgtttcctgg attgtattat ctgctttcct ttaccaaggc agacagaact 2160

gctgccttag cctgacaacc ggttgtcctc aaagcaaatg aacttaagca tttgggattg 2220

agggacagaa ggattctgag ggggctctgc gagggacggt gtgtgacatg tcatgcctgg 2280

agaaggaaca aggctatttg aaaacagaag gcaggtcaag ggtagaagtt aaaggagaat 2340

ctgaaggcag gtcagggaaa agaagaactg gaaatgaaac agaggacagg tgacaaccac 2400

ctcgaagagc tcccagagat tgtagaaaga gtccagtgta accagcttag taaccagagt 2460

atctggatta cccaggaagg ttgagctgct gagatttcag tggtgcaatg tctttaaaaa 2520

aacaggcttt gttgggaggg tatttccatt ttgaactttg aggactgttg gtcagaaaat 2580

gggctcaaaa gtgagtttgc ttaatgaaga catttaacgg ttgtgctgtt tatagtaaaa 2640

taaaactccc taccttgctt cagttaaaaa tgaagcactt ggtttcttcc atcctcctcc 2700

tccccttaat ggattgtggc agttgaaata atccatcgga ggacccacct gtagtgagat 2760

gtactgtcga tgtagtgccc ggtgtatctc agtggccatc tgccatggtg aggtgagcgt 2820

gatctctttt cagtatagta gttaacattt tctagtattt tttatggaga gaatgtcaaa 2880

agtggcattt cagaccccgt cccagatggg tctgaggaaa ggaaggctgt aaaggacatg 2940

gtaatggcac tccattcggg atgtattaaa ataatttgct tttcaggtat taatatgaca 3000

tttgtcattg tcactgattt ttttaaaaaa gcaatgcaca tgttggttgt ggctgttttc 3060

cgcatgctat cttcatatct aaatgcttca ttaattatcc gagcctccgg agaattaact 3120

ctattacgtt tgtatagtaa gtttgtaaac tgcttggcaa actgattaag aaataatttg 3180

caataccgtg ctactaaagt ggcaggtttc tggtagaaat tgtgcgagtc caatttggag 3240

ttttaagttc cttgattgat gaaactaaaa aggcaatttt ggaaaaagag aggggggaaaa 3300

gtagatcact tatcttagca aacggttgaa aatatgtctg tcctctgtgg ccccaaatcc 3360

```
agtgaaagaa attctcccag taaaagttgc ttcctaactc tgttttttctc agaatacctc    3420

ttacctttct caaagaaagc ttcaaccacc atcatcagaa agaaggtggc ctaaaaactg    3480

acacatggcc agtgcccgga ggggtctgga ggcataagtc tagatgccca gagagcatcc    3540

aggcactgaa ctgctcagag cttgagatga aatgacatac aagcttcagg gtaaaactgt    3600

ctactagcaa gattacctcc ctcaattcta ccattgcaga tttcttctga ccccaaatgc    3660

aaccttacag agaatgctga atgaggaagg ccaattcctt acaatgatgg cagaacccccc    3720

aagcgaatgc cctattgagg agaaggacat cactgtattt ggaattctgc ctgctagtga    3780

tagctcacac atcacatccc agaatcccac tcccaatgca ttatttcctg aggcaagaac    3840

ttaaggtcct cacctaattc ctccatcaca accattaact cttattggac aagctcctcc    3900

tgtgagtggg gcctgtactc acttcctctt agttcataat tccatcttca agagactgat    3960

ttccagaata gtaatctttt tccagcgttc tctcttctcc aatgccctgg ttgttatttt    4020

tcccacctct cctaatattg atcttcttgt cttttggtta gaactgcaac ttcggagttg    4080

agttcatttc ctattgctgc tcaattcagt agcaacatag ctggcttgtt cccagaccca    4140

ggaagtataa gtcattgaca gtttcctgag tggctctgcc aatccatacc acccttggta    4200

ctgtgaaaag gcttcttggc agccaggtgg cattgaggat ggtattcagg gcgctttcct    4260

tctgtcatat agttgtggga tctctaccaa gtgtgaaggt gaatgaggta agggagatca    4320

gaaccatgct tcctggtttt tcatacatcc aaggaagaag tcctggtgtg ggttgtttga    4380

caccttcttt ccactttcac ctttttatttt ttattccttc ctttctaccc ccgaaaccag    4440

acgagctac                                                              4449
```

<210> 503

<211> 3449

<212> DNA

<213> Homo sapiens

<400> 503

```
agctcctcag tagcagagag cagtagccca cttagaaatt tcagttgtgg ctttgaaagg    60

actacaagga atgagaagct ggcagcaaag actgatgaat ttaacagaac tgtatttaga    120
```

acagatagaa attgtcaggc aatacagcaa aatcacagct gctcaaaatc atcggaggat 180

ctcaagccct gtgatacctc atctactcac acaggaatcc atgtcagtga acgcctcaca 240

tggaaaagga ttttcccgac ctgctagacc agcaaatcgt cgtctcccct ccagatgggc 300

atccagatct ccatctgcac cccctgcctt gcggagaact acccacaact ataccatttc 360

tctgcgatcc gaagcattga tggtttaagt ctttggcctg gattgctata ttacagaagt 420

tctagtccca cttgtcaaac agagcattct gagtgtttac aggcggacct gttctcttcc 480

gacaagcaat ttgaatctta actttccatc agtcttcagt gtttttaatc taaggaataa 540

ttatcttcct gcattttgat ttcttagatc agaatttttt aatgccatcc tcattagttt 600

tccaatacaa tataagttga aacaatgtac aatattgtat attctttgtt gcaagtggca 660

gaaagtaagg ttatgtgcat ggccatgtgt ttgtaggtgc atgtgttgaa ataggaagta 720

tcctagtatg tatttagata tgaaaaactt atgtgctagt gttgactttg aaattataac 780

atgtatacct atatattctt tgtgtttatt taaaagtttt gaaaatatgc agtactgttt 840

atattttgta tacctttaa taggtatcca cttaaggcat ttgcagtaca aatattaatt 900

gaccacttcc ttggcccccca gctacaatga aaaagaagaa ttatgcacac atctaacatt 960

ggtagatttc taaagacaac tcataaataa tttcttaacc catataagga taaaataata 1020

ccattgatat tcttgtttat tctttttaaa taaaaatgtc acaagtttaa tagatcagcc 1080

ttgtaaagca agcataaaat gttcataaat gttttatata ttatttggta gtctagtatg 1140

gctttaactg aatatttgat cctcagagac agtatcatga gactgcatta taaatgacat 1200

gattaaatga tgaatttatt ttgtcagcct cagcaacaaa catttcctaa atgggatgca 1260

aaaagaaact gaatgatgtt gaattttagt ttttctttaa gttgtggtaa gctttagtt 1320

tagctgcttt aacatggagt catacatact tagaggtaag tcatttatta tttttttcct 1380

ttttctaatc ttttccttaa aattaataga taacaaacta agttactttt ttactaacaa 1440

ggaagatcag gaataatatt tctttgaaag ctgaaattat acttctcaca gtttgctacc 1500

aaaaaaaggc ttaaactaaa ccttgacatc cacagtagca tcaggaatag aaatgtatat 1560

tttggctaca gtttgcatac agtgaacaca taaaatctat attgaaaact gacagaaata 1620

tgaatgtcga ggggcttgga attctaaatg gaagatttta gaaggaactt tgctctctac 1680

tgtcactata taaaaccaat tatgttatgt tattagatat taactctatt taagcttttc 1740

ttttactaag aaattcttat gccaaatgta ttccaagagc catctcctta tgatgtattt 1800

gaaccattta gagaaattca cttcattgta ccccatgacc tgaggtaaag aaaataattt 1860

tcaaattgca gacttccttg aaaggctcaa gactgtagca tggtgatgtc tagattcata 1920

ctttactgta aggacagttt cggtagttaa gtggaattaa aggtctagag tgatttgtat 1980

tggatggtaa ctaaggtcta tacatctact cttttaattc ttatttcctt caggaagatc 2040

cttttccaca ggaagctatc aaagaaaagt aaactagaca ccaagtaata tcactctcat 2100

aatatgcttt ccagctagag gggagaaaac accaggaaag aggaaccctg ggtcataaaa 2160

tgacggacct gttaggaaaa tgctgttgtg tgacaatgga gagcctgccc aaggactgtg 2220

caacctatct gttcctctcc accagtgtat cccaagtagt ctggtatgat ctgtggttcc 2280

ttagaatatc gaggatctct ttaaaaaatg aaatttctga tctcacccca tattactaaa 2340

gcaaaatttc caggggtagg gactgggact ccagaaccat taataaaaca aaacaaaaca 2400

aagcaaaata ttgatgatca ggcagatttg aaaacagtga cattgcttga tctctgaatg 2460

gatggatgcc cttgggtggt cacttttctt cctaggactt gcctttgtta tctgtaaatt 2520

agaatggcta tactttcaga cttcacaatt ttaagccact tttttctatt aacagttgaa 2580

tgaaccagtg ggacacattt taacgtcttc ttatgttgac taaaattata gttagagctg 2640

agaaaaaaaa aatagcatct agtccaactc cttgattgta aaactgaaaa actaaggtta 2700

tttgaatgtt ctgttttctc tttttaaata ttttataact tttaaatgga aaaacctatt 2760

aggtaaatgg aaataatcct tgaaaatagt ttttgatgtt ttgtgatttt taactggtaa 2820

atttctactt taggtgggca ttttcttccc tagaatatgc cctttattat gctatcattg 2880

ctagatttaa agggacttgt aagcatttct ggaaatattt gatttaaaaa catatattaa 2940

tagatgtttt ccctagcaga cttttggagc aaaaatatta ttttagttca gcagaggatt 3000

actgatatta tgggctgatc tcagaaagga ataaggatga ggcagagagg agtacttgag 3060

tttgtgtgtg tgtgtgtgtg tgtgtgtttg tgtcagtgtc acataagttc tccatattgc 3120

cttatgtccc aaagccaaat ataaaaatat aaatgatgct ttgtataatt cattttatca 3180

aaaattaccc ataactttca tttgttttta tatcgacaat gaagatgatc atatttcatt 3240

ttgcagatgt ggccataaaa tattatttac ttctacatag gtgattttac caggtttagt 3300

tatcctgaga aaacatctgg acttaagagt ttctgcttcc ctacaaagat ctttaaagtt 3360

attttttaggc acatttgtga caaacaacta cttgatattg aaatctcctt cagccattag 3420

aagctatcaa ataaagtagg tgtaaaaac 3449

<210> 504

<211> 3394

<212> DNA

<213> Homo sapiens

<400> 504

atgcaatata	tgtggtcttg	gtgtctggct	tctcacttag	catcatgttt	ccaaggttca	60
tcagcacttc	gttgtttttt	attaccaaat	tgtattccac	tgtattgata	tacaattggt	120
tctccttatt	tttgggagtt	ctgttctgta	aagtcaccgc	aaacattgaa	ttagcaaaca	180
ttgaaccact	accccctacag	gaaatagagt	taggttcctg	caagcctctg	gtcacatttt	240
tgcctactga	tcgatatgta	atcttgtttt	atgtgtattt	ctgtttaaag	acaactaatt	300
tgatatataa	tgtgtctata	tatttatata	cgtatgtgca	tatgtatata	tgtataatat	360
gtgcatatat	atatagttgg	ttcattaaca	ttgaagttat	ggccaacagc	atttcaactc	420
atatttcaga	gggtggaggt	ttgtggggag	gagtgttttc	ctggagagcc	tctcaacata	480
gatacacttg	tgtggaccta	aaatcaccca	agctaggagg	gccagcccat	cctggtctgc	540
cctgggctga	gggctttccc	aggagagtga	actttcagtg	ctaaagccag	acagggacag	600
ctgctcaccc	tacctgcctc	ctaacatcta	tccacgggtt	ctgcatccac	cctttggagt	660
ggcacaaaac	aaagatgatc	ccctctttcc	ccaagtagac	tctgagtgaa	gacacatctt	720
agatccactt	ctcaggctca	atatcctcaa	tttcttggac	ctccttcata	ttgtgcgagg	780
tggcagaggc	tgcttgctga	tcaccaggct	cctctcctct	tctgcacttt	ccagcctctc	840
tcgcaggtag	gagtggccac	aggagttcta	gaatgtgagc	agaaggcatg	tggccacttc	900
caggccctgc	ctatacacac	cttccactca	cagtcctcca	tgctcttgca	caagagggaa	960
gctgccctgg	gtcactgcta	ggggagggct	gacctccact	caggagcccc	tcctaggtga	1020
gcaagccata	agcggttgtg	ctgggtctct	gtggttaggg	gcttacctgt	cacagcagct	1080
ccaatcactt	tgactggctc	acatgacgca	aagctctttt	gtgaccagct	cactcctctg	1140
cacacattcc	tgcctgtcta	gactcctttt	ttggagtcca	ggtgtggtcc	gtgtgtccaa	1200
ggctgaggcc	aatgctctcc	ctcttcccac	acctatctct	aggggtgttg	ggtaagattg	1260
cattaactgg	gggagcccca	ccccgtggct	gccccacatg	aaacactgtt	aaacagccct	1320
cccaagccgt	tttcacccat	accactgcaa	agtcacgttt	tccccatcct	ctgcagctgg	1380

gggcttggga acacaataat tagctttatt gtgaaaatca cccatcaccg tagctcactg 1440

aggtcctctg gatcctgatt ctgtccactg tgccttgagt cttcggccat tcactggtgt 1500

ctccactctc cactgcctta ctcacaagca tgatcactat actaacaaca gccagcactc 1560

cacaataaac tctaagtgct tcctgagtct caactcttaa tcttctcaac aattctcacg 1620

tagaaactat tatgatcccc actgtataga ggagtaaact gaggcacagt caataacttg 1680

ctccaggaca attagctagt aagtgacaga gctggactta aacccagcaa tttgatgtca 1740

gtcatattgt taactatcag gctaatatgt tgtctacacc tggatcatgt ctgaattcag 1800

ttgttgcaga cacaaataga gaacacagat gtgctccggg cagctgggcc ctctgcttgg 1860

agacgcctgc agttaacacc cctctgctta tagagcatgt ttcaggcgta cttgttcaac 1920

tggtcactca gcctcaacag cctccaagct gtttcatcat tttatctgtg aggatttcaa 1980

aggaaaccag gagccgagcg cccagaaaga aaagaagacc ggaatcagag agcgttctgc 2040

aagttcgcaa gttcaagggc ccagaggcac agtagcccag aagcctcaag gactttccac 2100

caaaactcac aggtacaacc ttgaaaacac aagaaaagaa aacaagaact tgccttcttg 2160

ggcaagggga gttgaaagag gccaggccca gaactccaga gatgaaatgg gagcagctgc 2220

agcctggctg ttattccaag cgtgtcgtgc tgagaagtaa ggggagtgtg tgctcatcac 2280

tgtctgtggt gtggactcag gacgcgcccc ctggaagcat cgattcggcc cgagtcgctt 2340

gctgaaggtg tgctctgcgg aggggctgcc cacccagcct ctctatattg accattttcc 2400

tgctttatgc aaagtaattg gccaagcatt gtacaaaga aggataatta atacactggt 2460

ttaacccttg atgaaattat tttcttttca ccgtccagcc tgagtgttga gagagatgaa 2520

atagaaagtt gagagccgga gaaggatgcc tctcccctcc agtgggggca gctggatggt 2580

gggcaggtta ccctggtgtg tcccaagccc tcggccacac acagctcatg ctcattccta 2640

tcaagggaag aactgctttc agcaagctaa ggctggcttg aaagtggtcc aagatctaga 2700

atgtccatcc ctttgttaaa aatcttcctc gaacttcctg tcccttgtcc cccccatcca 2760

gacaaccagg aggcagacat aggatcagag cctggcaggg acaaggcacc tactctgagg 2820

atagacaagg aacacctgag tttctaacag gccaggggtg ggtttcaata gcgaacaggc 2880

tgcaaataac aacaagtcct gctaaaaagc actggaagtt gaatcaactt cactttgcat 2940

attccatcct gaattatatg agtacacaca cacacacaca cacacacaca cacacggggg 3000

gggttgggag gggagagaga gagaaagaga aaagagatt aagatttcat gtgtttctaa 3060

cctacaggat ttctctaaac atgctgtgca ggtcatccag caatggagaa tatagaaaac 3120

ttccagagat agagaagccc ttctgcttcc agccccctga taaggtataa gagagacaga　3180

tttttaataa tgtatatcca aataggagag aaaaagattc tgaaactcta accttgagac　3240

gactctaacc ctacatatga tatatgacca gcagccacat gttttccatc attttaaaat　3300

agactttat gtattttaga aatgttttcc ataagcatgt atttcttcaa caatcacaaa　3360

acattaaatt tataataaaa cgaatatgaa gatg　3394

<210> 505

<211> 5153

<212> DNA

<213> Homo sapiens

<400> 505

ggggcctgag ccgaagctgg gtgggcatct gggagctaga ttcaataaag ctgttctgac　60

catgaacttg gaactggccc ctttcattct ggaagcccag ggactgggct ctggggcgcg　120

tctgctgcgg acagtgtgg aggcccctgg ccacgagctg ttccaggtca tgagacttgt　180

ctgctcacgc ctcccggtgc ctccagagtc ctcagttggc tccgtgctgt accctgagct　240

caggatccca ggcccagccc gttctctgcc ctctcgtgct gcctttgagc caggcgggct　300

gaacaccggg acccaggccc ggtggagagg tccccacggg gcagccacca aggccccagg　360

tcagcagctc agagcactgc caagtcctgg ctcctgaggc cacctccgtg ccttaagtgc　420

cttgaccaaa gtctggacgt gcctgtcctt ccgtcctccc tcaggacagt ttccagggca　480

cccgtaattc ctctgacaga ctgccatccc aaaagtgcac ccattctcct gggaggcctc　540

aggccctcgt ctagcagctg ccgtaggctg ggcccagtga tcccgccctg ggcatgtggg　600

gtgggcttgt tcatgcctgg cccagcaccg agagcccctg gtggggaggg ctgatacag　660

ctgggcccac acctccccca cccaagtgcc catcctcgcc cctcctgttg acccaggcca　720

caatcttggc ccagattccc ccctgtgccc tcctggcctg ccttggttct gcaggcaacc　780

ccagccctgc atggccacgt ctgggcagac cggcacccct accctgacac ccatctgtgc　840

cagtcctgca cggcaaacac ctcagagccc aggcctgcct accctcccgg agctgctgcc　900

accctgtggg ccaagggcaa agggacgtgg aggaggggcc caagggcagg gagggcttcc　960

```
taaagcaggg accatctgag ctgggtcttg acagctgcat aggagttcgc agctggagat   1020

gagtgacgtg ccccatggtc ccttctccca tcatcctctg gggccagagt gggtgacaca   1080

tgggcactgt ccaaatcccc ttcttcaccc cataattagt cagcagccac atctggccac   1140

ttctgtcctc taaacaccat ttccatccct ccccactccc actgccaggc ctcagagtct   1200

cagagcagcc ccctctgtct ccggagcaga tctctgctga cacccttgcc tgcactgcct   1260

cccagcaccc ctccctcatg cctgtgttca cctccaccag gactctcctg ctcaccacgg   1320

ctcccccacc cctcagtcca cggctcagac ccatctctgg ccaccgcagc ccctgtctgt   1380

gtctgaacag actgtgaacg tcccgaggag ccagcctctc ctcccagccc ccatactgtg   1440

tagttggagc agggtttggc cctgcagagc tcaaggcctg gtcggggagc tgccagggac   1500

acacagtggc catgtgttgg ggtcaacatc acagtggagc agcccaaggg ctggggaacc   1560

ctaaggatcc ctggacccag ccctgcagtc agaggcggct tcctggagga ggtgatgcct   1620

ggctcacccc acttccctcc ctacctccca gctgaccaaa accttccctg ctgactggcc   1680

gtccctagag atggggttgc caaaactcgc ccaaaatata ggatgagggc agcctgtgga   1740

agttctgggg gtgacaggcc tagattggtc actctgctca ccaaacctgt ttcccatctc   1800

gcagtggggt caccgtagct tccacctccc agggcgccca tgaggattta agctgatacc   1860

agatcagagt gcccagggat gtggatgagt tgccttgaga acaaagtcca gggaggaaag   1920

ccggggacca aggaccttca ggatggcccc agcttcccgg gctgtgcggg agccacgtgc   1980

cacggacccc tcccagctca ggcagtaccg ccagagcaca gccttgccct acagaagaaa   2040

ggtcggcgtg ccctgtcct ccgaggagat gagggctcag agagactcga gggggctcct   2100

gggctgtcca gagtgggccc tttgagagac ccctgggccc taaggttcaa gtaggccacc   2160

gctgaccttg gccttcctag gagggatgca aagccagccc accacttgaa cccggcagcc   2220

tgagcaccga gggacagggc cgccatccag ggccagggct aggacaaggc cagcaaggtg   2280

gcagacacgg agcatctcgg ccgggggggcc tttcttgggt cacacatcag cacggggcac   2340

agaggtgaga gcccagaaag agtcttgttt ccatttcttt taaaacggga agggaaaatg   2400

accccctccaa tactgaatat ataatgtata atgagtatat tatagactgg tgtagatgat   2460

ggggtgaata tagcgcgaac ccagcctggg ttctgggtgt cttaccaccc cagtcatggg   2520

tgcggtttgt gattttgttg tgaattgtgg aggaagggcc caggagggcc acatgccctg   2580

ccagggaagc catagagagc cctgccccgg gaggtcagtg cctccttcaa tgcctgcgat   2640

ccctcaccct gccctgcttc ccccaccatc cgccccgcct gggcagcctg ggccactgcc   2700
```

cgccagccac ccccgccttc ggactgtgca tttcccgaca gcgacaccgt gtggcagcag 2760

cccccacctc cgaggccagc cccgcctgca ccccccccac ctccgaggcc aaagctgtga 2820

atagggtgac cccttctggg ctgtggaagc ctcgggtttg aggacaatcc tggggaggga 2880

ccccagggcg cttcccgctc tcctggcgtg tgtgtgtttg cggggggaggt gtgggggcct 2940

ctgtacccat cacagccacg tgccgggacc gccggccatc gtcccgagcc agcgacatgc 3000

ctggcagcct cccgcccacc tacgccccgc tcaccaccaa ggagctgtca gcatcactgc 3060

ccccaacggc atctggcaaa actgttgggg gtgagccaga gggagcaccc ccgtccccaa 3120

cagcgctgag ttgagagcca catctgtctc caggcactgc caccagcagg aagggaggcc 3180

accctgagcc tgggaagact ccggagctgg gttatctgaa ggccgggagt tcaggtggcc 3240

ccaggcagaa gaggtggcac agtgaaggtc cacacatggg aggcgggcgg agtggctgag 3300

cctgaaagtt ggcatctggg cccaccaagg acaggcctgc catgtttgag ccctgagctg 3360

agcctcccca gagcctgggg ggaggctgga gccccagtga agggcctcag atgccaagga 3420

gggaggtcag gccctagggc taagcccctg gcacagactc atacccacac agtggcattt 3480

agtgaaatgg gctcctctga cgttgcctcc tgaaacaggc agggtcggag gggtcaggtc 3540

tgatgaggcc tgggggcatc cctgtgccag ctgggtgaac atggctggtc actgtcccat 3600

tctgagttca gcctcttct agaacaagaa gagaggtggc accagccagg tcgcacatct 3660

cagatatcgg acaactgggg agctgaggtg gaccaggaag gggaaggctt tcaggtctgg 3720

cttgctcaag ggactcagct cctaccccgg ccccagctgt tgctgagcct gagggcaggt 3780

ggtgctgcca ggtgccttgt gttggcctcc ctgcatgcgt cctgcctggt ggcccaagtt 3840

cggcatccac acttatgcca gccagtgccc tataccaccc tcacccttcc aaggctccca 3900

cagccttcag ggctgcccag tgtgagagct gctgtgagtc tatatgggta gcttggtttc 3960

tctgattggg agcagcttcc ccagggctgg gagcaggacc cagacagttg ctgtaaatgc 4020

tggtgtgtcg gcccctctgg tgctgcattg gtgacatcca gggcccgatc tgcttcccga 4080

cagtccccag agggccgcca tcctcagccc atttcatgaa tgtggagaca gaggctcaga 4140

gaggtagagt gactttccca aggccacaca gcaggccggg tacagctgga atgggcggcc 4200

agctctgtcc accccatgat ctgtggctgt cttgccttcc aggctgcctg gggttgggag 4260

agtaatggtg gcatagggga caacaggttg tgttctgggg tcccttccct ggggccaagg 4320

aactgggcca ggcccagggc cctgccaggt acctcgcttc cagccttgtc cctgaaggtc 4380

ctcatgcagg agaaaagcag ccacctgcac accgctgtcc ggcctcccca gaaggaatgc 4440

gctcccccct cagacttgac ctggggttcaa acatggcggg cctgtccttg gtgggcccgg 4500

atgccaactt tcacccctct caaatcctgg gcatccaggc tttgtctcca gccaagcccc 4560

aggcaggcag cactgcctgg acaggcaagc aagacatact ggccctcctg cagtccccgg 4620

aaataaaaca gagaagagca gcccttcctc aagaaggcct caccccgtcc ctccctctt 4680

ctctcccctc ttctaccct ctcccttcc ctctacatca cagacccaac agcctctctc 4740

gccaagccca tccaccctcc ttcctcccgc tcagcctcca gggcttctgc ccatttcctg 4800

ggtcagcccc acacaagtcc tggcccccgag taaagatacc atatccaggc aggcgctgtg 4860

gctcccgcct gtaatcccag cacactggga ggctgaggca ggcacagcgc ttgagcccag 4920

gagttcaaga ccagcctgga caacatggca aaatcccatc tctacaaaaa aatacaaaaa 4980

ttaactgagt ttggtggctc acgcctgtgg tcccagctac tcgagaggct gaagtgggag 5040

gatcacctga gccttgggag gtcaagactg cagtgagccc agatcgtgcc actgcactcc 5100

agcctgggtg acaagagtga gaccctgtct caacaaataa ataaataagt aat 5153

<210> 506

<211> 4711

<212> DNA

<213> Homo sapiens

<400> 506

tttattcccc aattccaagc tcttttccct caattttaag aatctttcta tatcacttgc 60

attaaatttc acaactacat tatcaaccca ttaaaatgtg actcttaagt ttgtctagat 120

tcaatgcata ccactatttc ttgcatttcc ctaaaaaagc tgccttagat cctctctgga 180

acaaagcagg gggtaaatga ccagatagaa ggatggatgg atgatagatt attcattttg 240

ctttccccag tcagaattaa gccctcccat ggccccttgc tgggctttct gtcaaaacac 300

gtgcatcgca tcttttcagt atctgttttg cgtgtcggtc atactcaccc ctctgagtgc 360

tcattctctc gcctataaaa tagaagaagt agtagaggtg gcctgtaagg cattgggggag 420

gaggaactgc cctttcactg gcctcatgac agccccagcc agcaccccg ctctagttcc 480

acccacagaa gcaagtctca cccctacccc ccaggtctct ccacttcctg ctagagaatc 540

acccagctcc ccagcctggc ttgaggctct tttcagcctt agctggctcc ccgcagctaa　600

gagccccatg ctccatttgg gcctccagtg tcacagggtt tgacctgctg ttactactac　660

ctttgtcata ggggcaggta gtgggcggac atgatctaga gtaccccaca gagtcaggag　720

cccccatgat ctgagataga ccctagagct gagcctgaaa ttgggtgggc actgagggg　780

cagcgatgtt tgctgaggga gaggttctgg tgagagacta aatgaatgag cgagtgaggt　840

aatggataaa taaagataag aatgaaaaaa tggtaagatg attaaattgg tgactgaatg　900

taagggtaaa ttaatggaag aatggattca tggattaaat aattaatggg gaaattaatg　960

aatgagagaa tgaacgagtg gttgaatggg gaaatgagtg gtagaggaaa ctggcaactg　1020

ttgggttggg ggtgtctatg gggattgact tctccaactc tcttacctct ttttcttctg　1080

cccccagtgt cctctatttc tccatccacc gctacgagca gggtaggttc tggccccacc　1140

tgaaggcctc taactggtcc accacaggtt tcggccaagg ccaaggatat accatcaatg　1200

tgccttggaa ccaggtgggg atgcgggatg ctgactacat tgctgctttc ctgcacgtcc　1260

tgctgccagt cgccctcgag gtcctgggga tctggggtgt gttgggagga ggagtggcct　1320

tgaaggttag gctgtgaggg taggtagcct catggagtct gttccccctt cagttccagc　1380

ctcagctggt cctggtggct gctggatttg atgccctgca aggggacccc aagggtgaga　1440

tggccgccac tccggcaggg ttcgcccagc taacccacct gctcatgggt ctggcaggag　1500

gcaagctgat cctgtctctg gaggtgagtg actcaccttc gtccctcagc ctgtggatcc　1560

tggagggctt aagaacgaag ctttcaagtc caacaggagt tcctggccca ggaattcact　1620

tactagctgg acaaccttgc ataagtcact tcacttcttt gtgcctccgc tttccttcta　1680

taaaacgagc ataatgtaat cacctcatat cattgtccag tgaattcagt gaggcaccct　1740

tctaagttcc ttgttgcttg acatgtggta tgcactctct tattatcatc attattatta　1800

ttccctggtc atgtctggtc ctttcctgat ccccccttcac aactccttgc cccagggtgg　1860

ctacaacctc cgcgccctgg ctgaaggcgt cagtgcttcg ctccacaccc ttctgggaga　1920

cccttgcccc atgctggagt cacctggtgc cccctgccgg agtgcccagg cttcagtttc　1980

ctgtgctctg gaagcccttg agcccttctg ggaggttctt gtgagatcaa ctgagaccgt　2040

ggagagggac aacatggagg aggacaatgt agaggagagc gaggaggaag gaccctggga　2100

gcccctgtg ctcccaatcc tgacatggcc agtgctacag tctcgcacag ggctggtcta　2160

tgaccaaaat atgatgaatc actgcaactt gtgggacagc caccaccctg aggtacccca　2220

gcgcatcttg cggatcatgt gccgtctgga ggagctgggc cttgccgggc gctgcctcac　2280

cctgacaccg cgccctgcca cagaggctga gctgctcacc tgtcacagtg ctgagtacgt 2340

gggtcatctc cgggccacag agaaaatgaa aacccgggag ctgcaccgtg agagttccaa 2400

ctttgactcc atctatatct gccccagtac cttcgcctgt gcacagcttg ccactggcgc 2460

tgcctgccgc ctggtggagg ctgtgctctc aggagaggtt ctgaatggtg ctgctgtggt 2520

gcgtccccca ggacaccacg cagagcagga tgcagcttgc ggttttgct ttttcaactc 2580

tgtggctgtg gctgctcgcc atgcccagac tatcagtggg catgccctac ggatcctgat 2640

tgtggattgg gatgtccacc acggtaatgg aactcagcac atgtttgagg atgaccccaa 2700

tgtgctatat gtgtccctgc accgctatga tcatggcacc ttcttcccca tgggggatga 2760

gggtgccagc agccagatcg gccgggctgc gggcacaggc ttcaccgtca acgtggcatg 2820

gaacgggccc cgcatgggtg atgctgacta cctagctgcc tggcatcgcc tggtgcttcc 2880

cattgcctac gagtttaacc cagaactggt gctggtctca gctggctttg atgctgcacg 2940

gggggatccg ctggggggct gccaggtgtc acctgagggt tatgcccacc tcacccacct 3000

gctgatgggc cttgccagtg gccgcattat ccttatccta gagggtggct ataacctgac 3060

atccatctca gagtccatgg ctgcctgcac tcgctccctc cttggagacc caccacccct 3120

gctgaccctg ccacggcccc cactatcagg ggccctggcc tcaatcactg agaccatcca 3180

agtccatcgc agatactggc gcagcttacg ggtcatgaag gtagaagaca gagaaggacc 3240

ctccagttct aagttggtca ccaagaaggc accccaacca gccaaaccta ggttagctga 3300

gcggatgacc acacgagaaa agaaggttct ggaagcaggc atggggaaag tcacctcggc 3360

atcatttggg gaagagtcca ctccaggcca gactaactca gagacagctg tggtggccct 3420

cactcaggac cagccctcag aggcagccac aggggggagcc actctggccc agaccatttc 3480

tgaggcagcc attggggggag ccatgctggg ccagaccacc tcagaggagg ctgtcggggg 3540

agccacccgg accagaccac ctcagaggag actgtgggag gagccattct ggaccagacc 3600

acctcagagg atgctgttgg gggagccacg ctgggccaga ctacctcaga ggaggctgta 3660

ggaggagcta cactggccca gaccacctcg gaggcagcca tggagggagc cacactggac 3720

cagactacgt cagaggaggc tccagggggc accgagctga tccaaactcc tctagcctcg 3780

agcacagacc accagacccc cccaacctca cctgtgcagg gaactacacc ccagatatct 3840

cccagtacac tgattgggag tctcgggacc ttggagctag gcagcgaatc tcagggggcc 3900

tcagaatctc aggccccagg agaggagaac ctactaggag aggcagctgg aggtcaggac 3960

atggctgatt cgatgctgat gcagggatct aggggcctca ctgatcaggc catattttat 4020

gctgtgacac cactgccctg gtgtccccat ttggtggcag tatgccccat acctgcagca   4080

ggcctagacg tgacccaacc ttgtggggac tgtggaacaa tccaagagaa ttgggtgtgt   4140

ctctcttgct atcaggtcta ctgtggtcgt tacatcaatg gccacatgct ccaacaccat   4200

ggaaattctg gacacccgct ggtcctcagc tacatcgacc tgtcagcctg gtgttactac   4260

tgtcaggcct atgtccacca ccaggctctc ctagatgtga agaacatcgc ccaccagaac   4320

aagtttgggg aggatatgcc ccacccacac taagccccag aatacggtcc ctcttcacct   4380

tctgaggccc acgatagacc agctgtagct cattccagcc tgtaccttgg atgaggggta   4440

gcctcccact gcatcccatc ctgaatatcc tttgcaactc cccaagagtg cttatttaag   4500

tgttaatact tttaagagaa ctgcgacgat taattgtgga tctccccctg cccattgcct   4560

gcttgagggg caccactact ccagcccaga aggaaagggg ggcagctcag tggccccaag   4620

agggagctga tatcatgagg ataacattgg cgggagggga gttaactggc aggcatggca   4680

aggttgcata tgtaataaag tacaagctgt t   4711

<210> 507

<211> 3755

<212> DNA

<213> Homo sapiens

<400> 507

tatgatgtca gcccattcct taaaaactct tacatgggct gggcacctgt aatcccagca   60

ctttgggagg ctgaggtggg cggattactt gaggccagga gttcgggatc agcctggccg   120

gcatggtgaa accccatctc tactaaaaag acaaatggcc aggcatggtg gcacacacct   180

gtggtcccag ctactcggga ggctgaggca ggagaatcgc ctgagcttgg gaggcggagg   240

ttgcagtgag ctgagatcgt gccactgcac tccagcctgg gtgacagagc gagaccctgt   300

tttaaaaaac aaaaaacaaa caaaaaaaca attcttacgt ggttcctcat tatcgtcatg   360

caatagggta cataagcctc ttcatagcct agcctgtccc tacaattcca gcttcactcc   420

ttgctactcc ccctcatatc tggccatcca ccattttgaa ctggtcagca tagtgtaatg   480

tagtcaacac gtgcaaagac ttcagaatca aaggcctggg tgtgaaccag ttctctccac   540

```
ttacttaacc acattatctt gaaaaaattt aattcatctt tcagagcccc tgtttcatca    600

tctgtaaaac tgggataaca atacttctaa gatcattgat aggattactt tggttattta    660

aaaagcattc ctgtgccatt actagtaata tttatcattt taaatgatga caattattac    720

tttcctcaga aagcttctcc gccctcccca cattatggaa ggtgccctta tagctcctgt    780

gcttatctcc taacagtgta aattcctgtt gaatgttcat ctctaccact gagcgtgagc    840

tcttggaaaa caggaccatt gtttctcgtt caacttggtt aactgcaaaa cattgatgat    900

aaccaggaaa tgcttgttgg ttgaaaggaa aagaagaaag aagtaaagca ataagcaagg    960

tgctgtgggg gccatgaaca tggcaaaggc aaagccccta ccatccagat gtagaacctg   1020

tagctggaca gacaaattgc agattgctat ctttgagtct cctgtaagga tgaagtatat   1080

ttatgagagg ggaaaaagaa ctttaaaaaa acttattttt tccttattgt gggctatatc   1140

atacatacag gaatgcataa aagtagtatg tagagtttga ggaataaaat gaacactcat   1200

gtaaccacca tgcaggaaaa gaaatagaag agagttgcag aagctccacc ctccccatat   1260

gtctcccctg tcacagcttc cttcctctcc ccaagaagta actcatgtcc tggatttcgt   1320

gataatcatt ccttgcttc tctttatgac tttattgcct atgtatggat ccctaaccaa   1380

tatagctttg tttttgaacc ttatataaac tgaaccatac tgtattcata ttcttgagac   1440

tggcttgtgt ctctcaagtt tgtgaaatta atccatgttg ttgaagatag ctgtggttct   1500

ttttctttta attactatag tattccatta tatgactatg tcacaattta tccatctatt   1560

gctaatggac atacaggatt tttccagttg gggaacgaca aacagtgctt ccgttaatat   1620

tgttgtatcc attttctcca ctatctgaac atgcagcatt ctttttgttg atattgttga   1680

gaattcactc tacctctgga agcagtgaaa gccctagggg aagaaaaatt caaactagtt   1740

tgcacaaaga agatttaaat aggtagacaa gagtctcaaa gtgtgcttgt aaatgtgtgt   1800

ttgaaaactt tgtgtttctc aaagtgtgct ccaagatggc ccacaacaaa atcatgtgga   1860

gaatttgtta aatatacaga ttaaagaccc agcccaaacc caccaaccaa gaccctctgc   1920

agttatggcc tggaaagctg tgttttagca agcttaccac cgcccgcccc ccacatgact   1980

catgtagatc accaaccctc tacctttttt ttttcctttt ttcgtttgtt agcatttagt   2040

taagctccct ccttgtggct tgaagccacc agaacacagc ctccctacct cccccacat   2100

atacacccтt aatcttctcc cagctctcct gccgaagaac ttggccttcg tgacagcagg   2160

ctactttggg agtttccctt cctcagaatt ctgcagtagc ccatagcact ccatcaatga   2220

tgggagcagc tccagcctgt tttatttatt attatttttt tttgtcagcg tgtgattact   2280
```

catgtctcct gactgaccaa ggtccacatt tgtcaaggtc aagagttggg cagaagctct 2340

ggtttctctt taagaggtaa tgcctcataa ccaactttac caaagtaacc tgggtgacac 2400

tcatggaagt tgatgcatac caccagcatt tccctggcct cccaggtgct tcccgtgctt 2460

ggccaggcct ttactttctg tagatgatac aggtgtaatg gaacaaatct cagcggtggg 2520

tgcgttagga gaggagaagg ggcagtactt tcgtgcccag aaaatcagct tcccttcata 2580

tgtcctcctt gggctagcat gccaacagtc tccaagcgga ctctacctta gcacacctac 2640

acactgcggt cctagtcttt tgctttcttc tccacatctc tctccctcat ccctcaatct 2700

ctcccctatt cccaaatgct gcagaacact cagaagtctc attttaagta actccgaagt 2760

ctttccatga cccctagcaa tgttttacct aaataggcac ttattgtttt aaatagactt 2820

tccttttag agaagtctta gcttcactgc agaattgggc atagagttcc catatactag 2880

ttacactgct ctaaaaatcc tgtgctctac ctactcatcc cacccccac cgccctctgt 2940

tcatcgatca ttgatctttt taaacctgcc tccagttttg acttttccag aatgtcatat 3000

aattggaacc atacaatatg taccctcttc agaggagctt gtatcactga gtaatatata 3060

tttaagttta gtgctgaata atattcccct gtccatctgg atatatcagt ttatccatcc 3120

attaaaatac tgaagatcat cctgggtgct tccaagtttt gtcaattatg catgaggttg 3180

ctgtcaacat ccatatgcag gttttgggt agatgttcag gtttcagctc atttgggtaa 3240

acaccaagaa gtgcaattgc taaaaagtat ggtaagagta tgttcagttt aagaaactgc 3300

agtgtcttct gaagtgggtg taccatttcg tgttcccaca agcaatgagt gagagttcct 3360

attgctccat gtcctcacca gcatttggcg gtgtcagtgc tttggatttt ggctattcta 3420

atagatgtgt agtggtactt cattgttttt ttaattgaga cacctagttt taaaactact 3480

cttcactttt ttctctgtgt tttggggggg gtcttgtgtt ttaaaatttt gcagagcaaa 3540

ttatgagcaa gtgatagtgt tctttcatta ttaaacatga tttacagata tttcagacta 3600

actctctttt tttccttta aatatagata aatgcagagg gaacaccaga ggacgttttt 3660

cttcaactct gcacagctat tgactctatt ttctgaaggc aaaaatgcat gtttgttaga 3720

atggaaacag aaaaacatta aaaagttcat tcctt 3755

<210> 508

<211> 4518

<212> DNA

<213> Homo sapiens

<400> 508

ctattctttt	tttcttccga	ctggtgtgga	tcccagacaa	tttcagggtc	ctgcagggtt	60
tgagaccctc	tgtgaacact	gacccgggac	cccgttttgc	ccatgggaag	ttgaagccag	120
cgcagccccc	ggccaggggc	actgtctcct	cggccccggg	atgctggacg	gaggggacaa	180
cgtgcagggg	cagctgctgc	tgggctgtgg	acctcccgga	accggaggag	cctgggaggg	240
gctggcccag	cagtgagggc	tccgatgcgc	ctcaattcat	atgctaagga	gccctggatt	300
cggctttaat	tgccggagtg	ggaggtgacc	ccaggggccc	aagctggggg	cgtggctggg	360
aaatgcacag	aaagagactt	cgacgggggt	ggctatggtt	tgtgctgtgc	tgtgcacacg	420
tctggctgat	agaaatctat	gtctataaac	agttccttcc	aggtctccgc	ggaaaactga	480
agattcctgt	gtgctttcag	aaaagaggtt	ccaaggaaaa	gggcagccat	ttagttttca	540
caagtctggg	cagtgagcga	tttggagctt	ccatccttgg	ctgacatcat	gaacaccaat	600
gttgctggcc	tcgatcgcaa	gaagggtggg	acttcgtgct	tagccttcct	ggggaagggc	660
ctgtccctgg	gtcacgtccc	cagtgaccac	aggaggaaga	gaagggatga	ggatcctggg	720
gggcctggct	ctgcgtccac	ccgtctctgt	gtggatgcct	cctgtgtcca	gggtgataac	780
cggtcacccg	actgtgtcct	tggggtcatt	cctggcttct	cctgccgctt	gatcacccct	840
ctggctgcag	ggagcccagg	acggagaagg	agagacctca	ttctccctgg	ggaatgcagg	900
ctgagaccac	ccatgcttct	ggagcagggt	ttcatgtggg	ggaggtccct	ccagggaggg	960
acagtgaact	gacgctgtga	tattgctcag	gatggaggcc	cagggcagac	ggcgtcacca	1020
gctgccgcag	aagccaggtt	gccagagggg	ctgtgtcacc	agccctgggg	acgccatgtt	1080
gctgtgcgtt	tcgacacatt	cctgtggagt	gtctgaggaa	aaacagggca	cacgcattcc	1140
tgataagatt	gcaccaaaag	gccagggtgg	gggaccaggc	tcccagcctc	cctctgtctc	1200
agttgggggc	cgaggggcag	ggacagccag	gagaaggccc	agccagatgc	tgctggcttc	1260
ccccaggact	ctgcccgact	ggcctctcgg	ttaaacctcc	tcacctgagc	ctctcttatg	1320
gcgtggttga	gtcacacatg	agagggtttt	gtctgccggg	aggggctctt	cttatgggac	1380
aacaggggcg	cgaggtgtgt	ggtgtggctc	tcagggatgt	gtctggactc	tatcacgtct	1440
gagtgtccct	ggggccagag	tgctgggggc	aggagcctgt	ggtttatcaa	gcaccttctg	1500

```
ccagctgagg ccgtgacttt ttgtccctca ctggaggagg cttcaaggtc agcctcttct  1560

tcctttggtc ccaagcttgc cgtgtctcct cctcattccc cacgtccaca tgagaaggca  1620

gtgttcacag gtgggttggt ctgagattga aatcgcaagg ccaggatttt ctgtctgggc  1680

agccccctcg agtcagcctc agaggagccc agacctcttg gatggctttc ggcgagcctc  1740

ccagtgggca cagcactcgc caccggacac tgcatggact cagcttccac actgcgatgg  1800

gtatggcctg gtccttgcac taccaggggc aaggaggaac gctatgcctg gtgggggtga  1860

gcaccccatc tcatgacaaa gcagttctcc agggtctgcc ccactttct gtaaacctgg  1920

gggtccagcc cagtgcattg gctggaagga gaggggacgc ctcctgtccc agctcatggc  1980

gctctgccga ccccactgtc agccccaacc ttggtgctcc gggggggcccc aatgccatag  2040

atgcacttca tggggagcaa ctggggctgt tcctgaggac caagatgggc agagaccctc  2100

aagacgtcca tggattgacc cctgctctct gtggcccctg cctggctggc ctcccctcct  2160

cacactctcc acagttctca tgcaacacag cgcctctaaa aatgctgtcc tgaaaatgtg  2220

cgctttgggg aagagcagct tcctcctctt cgaccaagtt cgggtccctt ctacccttca  2280

gtggctgtag gcagtcggtg agggtcctgg acggggtggg ccggggggcag ggaggggcac  2340

tgtgggcttt ggttgctcag gggtcctggc agacacacca acctggtgtg tttggaaatg  2400

cacctggatg tgtgctgacc tctgtgtgga ggaccacggg tctgttcatc ccccactggc  2460

tgcacccccg ggaggctgca gcgtgcacta ttcggtccct acgctgcagt tattcttgta  2520

tctgccttgt cgctggcctt gctgcccatg actccctcag gtcagcccac gtctctgtca  2580

aactttcatc ctccgcaatt ctgcgcagcc tgtaaatgct taaaaaatat gcggaacag  2640

gtgagtcaca ttacagaaag gacgcaacct ggaaaagcac agacattcct tccccttctg  2700

cacctgttag agtaagggag gggcatgagg gggtgggacc tgcacaaggt gcagctgata  2760

gaaatgcagt cttcaggaaa agccctggct ctggaacggc aaaggctgtg tgcctgggaa  2820

aaagacaaac gtgtcttatc cggagacggc cccctgccc caaaggctgt cacgctgccg  2880

ttcagttatc tattctgcag cgatagaact ggcttgacct aaaaattcag tgacggaaaa  2940

atgtcatcta atgctgctta gtgcagtcag gcggtcagca gatgagggca gaaggccact  3000

ggtctttgac agaacacgcg gatggcgaaa taacaaaaca ggtggcggat gagggcagaa  3060

ggccactggt ctttgacaga atatgcggac ggcgaaataa caaaacaggc agcagatgag  3120

ggcagaaggc cactggtctt tgacagaaca cgcggacggc gaaataacaa aacaggattc  3180

aggctgcact gtcagcagca gagacaaaca attcttccaa aataaacaag cgagctccca  3240
```

gcagaggcct gtgaagtctc ccgttctgcc caaaccacac acatgtggcc cacagaggag 3300

gctgcagagg cccacggggc actcaagtgg ccgagtgtga gacccaggcc accggccgtc 3360

ctccctgtca gaacaaaagg ttcatggaaa gggccaggag gacacagcaa ggggaaccga 3420

atgccactgg catttcttgg atcttttgta ccatagtcta agcatttaga ggaagcaccg 3480

cgagtttgct gccctggaag ctgacgtgct ccccaaacac aagacgcagg actggaggcc 3540

ttgccccgca gctcgagagg ccgttttggg acatatcaag gaaggaaggc ttaagcgaca 3600

caggacctgg ctgacttacg cacccgctgt ctaaagatgg ggtgctggcc ggtgaactgg 3660

agtggctcac ggcagacctg gagtgacagt catgggtctg tacctgtgtg gagtcctcca 3720

tggctgggct tgcagagact gagctggact gcattgcaca ttggctggaa ggagaggagc 3780

cactgagaga cccagcttac ggcactctgc ccaccccact gcccacccca accctggcgc 3840

tccagggggg cccaatgcca cagacacact ccaggggggac aattggggct gttcccaagg 3900

accaggaggg acaaatgccc taaagatgtc catggtttga cccctgctgt ctgtgggccc 3960

tgcctggctg gcctcccctt ctcacactct ccacagtcct catgcaacac agcacatctg 4020

aaaatgctgt cctgaaaacg cgcactctgg ggaagagcag cttcctcctc tccgagtgga 4080

gcgggctggc cccatgaggc gtgattttca ttgtgaaatg tgcttcacgt aacactgggg 4140

cctttgtcac catttttaat tgtacagttt ggaggcatta agtgtgttca tcatcaccac 4200

cttccaccca cagagcttct tcgtcttccc aaacggaaac tctgtcgtcg gtaaacactc 4260

cctcccctcc cgcagcccct ggcacctgcc ttctccttcc tgtctccatg aacctgacaa 4320

ctcttcggac cccacctaag tggagttggg caggatttgt cctctgtggc tggctcgcgt 4380

cactcagcgg ccctgaagac tcatctgcgc cgcagcctgt cccagaatct ccctccctct 4440

aacactgatt aatatcctgc tgcacaaaaa aacaaagatg atcatttgat acccgaaatc 4500

cacttgaaaa ttggtaag 4518

<210> 509

<211> 3609

<212> DNA

<213> Homo sapiens

<400> 509

```
tgatgcttag aatggttagc agaagtaggt aggaaacact cagacctcaa ttttcatgaa    60

cttcactttt cacagtattt taaacaatta gagatgttgg aaagaggtaa ggaagaattt   120

tactatttag tctgctgcac atattctttt gttgttgttt ttttgtttga gacagaattt   180

cactcttgtt gcccaggctg gagtgcagtg gcacgatctt ggctcactgc aacctccgcc   240

taccggttta agcgattctc ctgcctcagc ctcctgagta actgggatta cagacatgcg   300

ccaccacgcc cggctaattt tgtattgtta gtagagatgg ggtttcttca tgttggtcag   360

gctggtctcg aactccagac ctcaggtgat ccacctgcct gggcctccca aaatgctggg   420

aatacaggca tgagccatgg cgcctggcct gctgcacata ttctgacacc atgtgtctgg   480

tgaacccaga ccctgtaaag aatcttcact ggtgattgtt tgatataggt gaccttcccc   540

ctccctcttt ttgcctgatt ttatttccct ttctagatta taccactaaa tcagaaagca   600

ctgaatattt tgtaagtttg tttgggtgag agcaagaata atcttttctt gatttttatt   660

tttatttttt taaaaccttt aactcctgct gaggttgaga caaaccgtat ctagcatact   720

gttacctgaa acaaatgtgg taggagggaa ggtgatacag tcctgccatt gcagaccagt   780

gggaaaggcc aaagagtatt ttgagtagca atgtacatgg tcaaagcatt gtttatgtac   840

tatttcattt gagtttgatt atgtagtttg aacctggctg gtcaggattt gatagacagt   900

tactggtttg ggatctgact tttctttttt ataaaaatta acaaaaaata tatgtaaata   960

tacacacata catgtggata gttctctctg tgtcttaagt tatttgtatg catgcagctg  1020

ttgtgatcac gtgtctgatg ggcaggtaga agtagaaata agagttccta tgtttcccag  1080

gctggccttc ggctcctggg ctcaagtgat cctctctcct gggcctccca aagtgtcggg  1140

attgcgggcg tgagccaccg tgcctggccc tacatttact ctttaaatac tttcctattg  1200

gaatgaaaga ggcagggtgg ctcacgcctg caatcccggc actttgggga ggctgagaca  1260

ggggagtccc ttgaggccag gagtttgaga ccagccaggt caacaaagca agacctccct  1320

gaagggaaaa aacctccagt tcccatttgg gtgtcttttg gaaactgcta atacctcagt  1380

ctttgttgtt gttgttggta tttcctccaa acacactctt tctcagtttt accattttgt  1440

ttttgtgaac taagcaagag caggaattaa tttatatagt tattcatatc tggacaaatt  1500

ctggaaggtt gctggagtct ctttcacttc ttaaagtgtt ttcatttaag aaaaaaatct  1560

ttaattgtag cctgcacaat tgtagcccta tccttacccc taaggtccca tactcccaag  1620

gcattgaggt taggtagaag gcccaagaat ggggccgggg cccattgcgt ctggaatgca  1680
```

```
gtgtgaactg atggctgtct ctgacctcat ggacatccct gcaccttcct cctggtgctc 1740

gccagcaggt gcaggaattc agtcgtctat gggttcgttt cccctttttc gcgggtctct 1800

attccgtggt gtgaagagcc tgtaagggta aatgtcctat ttgggtacaa ccactttact 1860

cttattctgt cagaatctgt ccaagcgttt ttttggcttg tttgctgtgt cctttaaag  1920

atggttgaga taaaaccagt cagaaaagaa atagtttttt gccctatact taactaaaat 1980

attgatttat tccaaagttg tttttatttta cttttcactg acctcaaaga gaaaacttag 2040

acaccttaga gaaacatgaa acattctcag aggaaggagt gatgagcatg gttctgtatt 2100

aatgtgttca ctccttagca gaagatatag aaatactgca gcttaggcca ggcactgtgg 2160

ctcatgcctt cgggatccca gcactttggg aggcagaggc gagtggatcc ctggagttcg 2220

agaccagcct gggcaacatg gtgaggcccc atctctgcag gaaatacaaa aactggccgg 2280

ttgtggtggc atgcacctgt ggtcccagct actcgggagg gtgaggcagg agggttgctt 2340

gagcctggga ggcagggggtt gcagacagcc aggatcacac tactgcactc cagcctggca 2400

acagggtgag accttgtctc aaggaaaaca acaacacaaa ctgcagctca ttctttctaa 2460

aggtatctgg aaaatgacag aactgagaat aacatccaga ttcagttccc tgccatgaga 2520

agttcctttt gccttgtttg tggatattgt tgtcagttca ttgcagctgt cttgagtaac 2580

ttacagaggc taatgtgacc aaagaaagat ccatcatccc ttgttgtttt tctagttaaa 2640

agtcatagca caggtttctg gtaacataca aatgataaga cactgtccat aattctaatt 2700

acaacaattc agtttgtata gtaatttggt acagcattaa aggggggtgat gccctcctcc 2760

catctcattt ccctccctttt ttcctatttc acatttattc ttttgtctaa aagacagaaa 2820

attggtatga ttctcatatg ccgcatagaa cgtgtagctc catcacatcc cacagctttc 2880

tagaggtctt tggggttgga acacaaagtt taacttctgt ttctgttttt ccttgaattc 2940

ttttgtttcc tggccctttt ccatcttgcc ggttcccctt atgttaccca ctatcgtcca 3000

tgctctccct ctgtgttggt tgtctcaaaa cagcattcag cggaattcat tgagtgggtg 3060

aattctgtga agttgccttt tctggcagtg ctgttactca gtgatgcaca aacgtagcat 3120

ttgcccttgg gtagacaaag atctgtgttt tttttttttt tgtttgtttg tttctttgag 3180

acggagtctc gctgtcaccc aggctggagt gcagcgggtt caagcgattc tcctaccttα 3240

gcctcccgag tagctgggat tacaggcgcc tgccaccacg cccggctaat ttttgtattt 3300

ttagtagaga tggggtttca ccatgttggt caggctggtc ttgaactcct aacctcagga 3360

cctcaggcga tccacccacc tcggcctacc taagtgctgg gaacaggctt gaaccaccgc 3420
```

```
gcctggcaga tctggttagt attcttcaaa ggagccaaag gcagtgcttt cgtgtttgct   3480
ttgaggggaa gtagtggacg atttgattgt gacacctttt agcattggtg agttgattta   3540
tctaaaatta actgttaaag ttagctggcc ttatacaacg taaaagtaaa gaaaattcat   3600
cagtttctc                                                           3609
```

<210> 510

<211> 3500

<212> DNA

<213> Homo sapiens

<400> 510

```
ttaagctgcg aattaactga ttgctgtggt ctaagtgttg gcgtccttcc aaagttcata    60
tgttgaaact taaccccccaa catgatagta ctaagaggtg ggaagatttg ggagggggatt   120
aggtcatgag ggctcctctc atgaatggga ttagtgccct tataaaacag gttgaaggga   180
gctaccttgc ctctttcacc atgagaagac acagcattca tctcttccat cacagcttgg   240
tcttgaacct cccagcctcc agaaccgtga gaaataaatt tctattattt ccaaattacc   300
aagtaattat acaggttttt gctatagtag cccaagtgga tgaagacatt gatctacctg   360
tgattattgc tactacatcc tgcaaactgt tgcccactgg gggttacttt ttcaacttaa   420
gagaacatag cttccttata cataaaaatc tataaaacat gcaatttatt accctctaaa   480
aatgtccttt ttctcaaaac tggggttgct gaatgttcag gctgcatatt ctccctatag   540
taggcattga gtaaaataat tataacttta tctctgtatt gtgtgtggtt ctcaggcatc   600
agaagaacaa ctgtaagtgc agaaatccca tgcgagaagt taatttagga gctattaata   660
atttctcaga tacgatctca tgtattaact cagcacaact ctagtgttaa agttatcaaa   720
gagcatatag ggggacgatg aaccattggt taatgttttt aaaaaaatct ttagtcctga   780
gctttatatc atgatctgtt ttgaggaaca tcctaatgtc aaggccacgt tcagtcctct   840
gacatcttcc ctcctttgtc accttctaga ggaagccttt ctttccccct tctgcagttc   900
tttcttcctt taatagctgt ctttgtttta ataaggaaac tgtcgggggc agggtggaga   960
taaggaaagg aaaaatgaac tgaaggaata aagaagctac aggaaaagag aaaataagaa  1020
```

agatttttca gaaatattta tatctcttag agtcccttaa atactaaaaa ttagaaactc 1080

gagatggtat gtgacatttg taccctgaca ctttgcctgc tgtgaagtgg taatggtgct 1140

cagctttccc acggcagccc caagagtctg actttagaga attcctcaca tattctgcca 1200

gggcagacac gtgactaatt tatttctgtt ctaaaagacc tcagagaaga agactggtct 1260

agaatatctc tgaaagttag agcacattgc aacagagtgg atatttattt ttattttatt 1320

taaaaaaatg atttaaagat actatgatgt caagatgaca tcgttaggtg atatggccgt 1380

aatatgttgg gactaatgta ctcaaatgag tgggtcactg agtcaagtca tgggttcata 1440

ctcaagttca tcatctaatt tttagccctt tattattttt gagtaaaaat agcatttaaa 1500

aatactgttt taataaatac tgaaacatac tcattataaa gaaagactag gtaatagaaa 1560

gtttaagaga aagtctccac cccatactcc catctctcaa ttccttaccc agagaaattt 1620

gctgttaagt gtgatgtata gcctttagc cattgtttgt atatacagtt ggttggatga 1680

gttaaagtac aaatccctag aagtagaatt ttccaatcaa agttttgtgc atttcaaatg 1740

ttgaaagaaa atgccaattg cataccaagc cctttaaatg gatttgatca actcatttaa 1800

gcgcatggct ggatgcaagt gaaaacccca tccggccaca tctctaggac agcattgggc 1860

tagctcaagt atggtagacc aggggacagt agcactccac accccaaggg ctttggaaat 1920

ttgtaggagg agaggtattt tgttgtcgcc atgactggga ggttaaaata agggattggg 1980

agattaggct tgatgcagtg cacagggcgg ttccacacaa ttaaacgttg tcttgtgtcc 2040

cacacaattt acaaatattt tggtgggcat tcatattggt gaagaacctg cttattattc 2100

tgggcccaga gcctaactac attttacata taaattcaaa gttggttttt gctgttgttg 2160

ttgttcatgg ttttaatata cattgaagtt tttaggaata taaccaccat gtaaattgag 2220

agttaaaaca ttatggaaaa ttgcctcact gtggcattta agccatagac caacatatct 2280

ttatcagtct atattcacta ctagggcatt tgcagggatt ctatgtataa tctctatgcc 2340

taagcttata tatttagagc attatactga cttttaaaaa aacgtgtgga gtaaattata 2400

gtatttattt cacttaaggt acactacaaa atatttgtta taaaaggagc tgtgtcgggc 2460

cgggcacagt ggctcatgcc tgtaatccca gcactttggg aggctgaggc gggtggatca 2520

cctgaggtca gggatttgag accagtctgg ccaaagtggg cgaaacccct tctcttctaa 2580

aaatataaaa attagccaga tgtgctggca tgagcctata atcccagcta ctcgggaggc 2640

tgagacagga gaatcccttg aacctggcgg gctggaggtt gcagtgagct cagatcatgc 2700

cattgcactg cagcaacaag agcaaaactc catctcaaaa aaaaaaaaa aaaaaagctg 2760

```
cgtctgacaa ggttgaaacc cactgctcca gagagcagtc acatttcctg gttcagatgt   2820

gctctgctgg ctcatgtggt ctctggttct ctgattccgc ttggctggct cctgaggtgt   2880

tcacctcctt ctccatgccc cagaacccat aggtcaagag ttactccaag cttacaccac   2940

agtctcagag aacatgacca agacgggtcc actctgcctt gtgcactcca aaggaacagg   3000

caacttgttg gcagaagagt tcctctcagt tcctaggaga aagcaagttg accaacctag   3060

tgaccatgaa gcacgcctga gaggagtgaa aacaagaaga tactcgctcc ctgcctatgc   3120

taactagtgc tttttgcagt tgtaggtatg gaaggagaga gtgcaagtgt aagagattat   3180

ttagttgcat ttcaggatat ttcttagtct ccctcttatt ctcctaaaat gatttattac   3240

tgtttttttga cctttgtttt acataacatg aaaatccttt ctccaaaata ttgacttcct   3300

atggaattac aagactctga aattttaaaa agaagaaatc tgaatccatc actaaaatgt   3360

cagcctcatc cagaatgcaa gttgtatgag tgtagggttc tgcatgttct gttcatcatt   3420

ctagtcccag catgtagaac agtatctgat ctgttctcaa tgatattgat tgaattaata   3480

aattcagaca ttgtgtaaag                                                3500
```

<210> 511

<211> 3620

<212> DNA

<213> Homo sapiens

<400> 511

```
acttatttgc tcaaggggttg tttattgaac atgccagtgc caggagactg gcgtggagca   60

tgaggccgag ctggctgga gtgggtttttg gggagtgtca ggaggctggt gtggagcgtg   120

aggccgaggc tggctggagt gccaggggct gcagggtcag gtgtacatcg gtgagctccc   180

gcaggacttc ctccgcatca cgcccacaca gcagcagcgg caggtccagc tggacgccca   240

ggcggcccag cagctgcagt acggaggcgc agtgggcacc gtgggccgac tgaacatcac   300

ggtggtacag gcaaagttgg ccaagaatta cggcatgacc cgcatggacc cctactgccg   360

actgcgcctg ggctacgcgg tgtacgagac gcccacggca cacaatggcg ccaagaatcc   420

ccgctggaat aaggtcatcc actgcacggt gcccccaggc gtggactctt tctatctcga   480
```

gatcttcgat gagagagcct tctccatgga cgaccgcatt gcctggaccc acatcaccat   540

cccagagtcc ctgaggcagg gcaaggtgga ggacaagtgg tacagcctga gcgggaggca   600

gggggacgac aaggagggca tgatcaacct cgtcatgtcc tacgcgctgc ttccagctgc   660

catggtgatg ccaccccagc ccgtggtcct gatgccaaca gtgtaccagc agggcgttgg   720

ctatgtgccc atcacaggga tgcccgctgt ctgtagcccc ggcatggtgc ccgtggccct   780

gcccccggcc gccgtgaacg cccagccccg ctgtagcgag gaggacctga aagccatcca   840

ggacatgttc cccaacatgg accaggaggt gatccgctcc gtgctggaag cccagcgagg   900

gaacaaggat gccgccatca actccctgct gcagatgggg gaggagccat agagcctctg   960

cctcgatgcc gttttgcccc cgctctttgg acacgccgac ccggcgctcc ccaaggaatg   1020

ctgtcccaac aagattcccg tgaaagagca cccgtgtcgc cccctcccgt ggacttctgt   1080

gccgccccgt ccacacctgt tcttgggtgc atgtgggttt tcggttcctg gcggtccagg   1140

acggggcggg ggctcccctc ccatctcgtg ctgggaggtc tcagcgcgct ctcctgtccc   1200

tgggacgtgc gtctctcctt ctcatgccgt tctggaaaat gctcttgctg tagagagcag   1260

ctgcttctgc cagggtgttg gaggtggtgg agcgccttcc gattccattc atggcatttt   1320

gtgatgtgat gtaattggaa tagagctgtt gatttaaggc acacacaatc cctcacactg   1380

tgggtttttt tttagaactt cccagacgaa aactcacgcc cttgccctaa cgcgctttgc   1440

tgtgagcctg gcccctgccc agggcttggg tctggtgagc tgagcagctt cctgtggatg   1500

gtgtggggcc ggcctctggc ctggctcacc tggccactgt ccagccagcc ttgtgacaga   1560

ctccggcctg aaggcagaat gaacccacac ctggagtgag gaaggggggcc tggcacggtt   1620

ggccaggctc tgcctgattg ccagccagcg ggcatctgaa gccggatcct tcgcccgccg   1680

gaggctgccg tccgtctctc ctgctgcgct cgtgccagct ccgtgggtgt cctcccaggg   1740

agcttctctt ctcaacaggc cttgcgaggc tggggtgaga ggtgatagag gcagcactgt   1800

gcatgattcc gagagggtgt ggtggcactg ccagccgact gctgacagct tgggagctgc   1860

tgtgcccagg acgtgggttc agcgtgggcg aggaaagcct ggcgagcgtg ccctgtaaa   1920

agctttctga ggcgggaggc gctcacttac ctctgactgc ctgggcgctg cgtgtagcat   1980

cttggcctac aggacagatt ttaggtgaca cctggttatg acagtcagaa atttgagaag   2040

cttctcacaa gtgatgcact ttaaataatc tgcatgccat tgagacacct gcatgtctgg   2100

tgtttgtggt tcaagtgtct tgccgccggc cttcggatgt aaacccactg ataacggaca   2160

gaaagagaat gcccacaagt gggtcttctg tggaagatgc agaaggagga agttagtgct   2220

●

```
tacattttag tcttttctc cctcaaaaaa ataggttaag tttcagtgcc agctagaaaa    2280
tactgctttc tgccatcgat tggggggtggt ttttgtcaaa tatactgttg ataaatattt    2340
atttttgtaa acttgaagtg tgtggtggcc gtgggggagg gacatgctgg cagcaggcgc    2400
cttcttcagc tgtgggtcct aaaggccttt gatcctttga agaagaaaga catggtattt    2460
gttcagcaga cgccgaccac tcagacggag gggcccctgg gattccctgt ctcagatggc    2520
ctggtcttac gcctgtgtag atttcttctc cattgggaat gaaggtgtca ggtgggactg    2580
gaacgttcta gatggtatgt tccgtgatat taacaactct aacccaggac agaccacaag    2640
ccacactcag aggcctcact gtgctggggg cttcggtgtc caggcgccca ggtgtggcca    2700
ccagcaccgg tttctgcctt cgcgttgctg gggtgcagtg agactgccac acgcgtgcac    2760
atgtggctct gtgggtgtct cctagagagg acgtggcccc tgctgccagc ccttgagcag    2820
cccgtgtggg ggcccgaggg acccacacag tgggggccag cctcgctgga gggagagcaa    2880
ccctttgccg atgaccacgc ttgccgccat ctcttagttt tcttttcac aagcgcttta    2940
tttttttaat agacaaatca cattttgcaa ggcctttaat taaataagat tcttctttcc    3000
ttcattttat gctttatttc ctgtttgaag gcttactgta gaagtggctt actgtagaag    3060
cagcttgctg agcccctccg agcggtcccc agaattagct ggttcacaac ccccaccctc    3120
ccccgccccc gcctgtgtca ggtgtggatg aggtcgtcac actcagaagg acaggcttgt    3180
ctgccagctc acaaggggag gctgcagtgg gtttgggagc tgggtttagg cccctggtgt    3240
ctgagggccc aggccttgcc agcctctgct gctcctgctc ctgggtttga agàtgcaggc    3300
cgatcgccag ctccgtggca gcggtcacta aggacagcct gactgtgcca tcttggagcc    3360
tcaggcgggg ctccggagat agaagacagg tcgccggagg ctcccctcc tctcctctcc    3420
cctctgcaga tgctccctgg gcgctaccct gcagggtgcc aggcaggagt ggtctcagaa    3480
cgtgcgcttc tgattatttt actggggtcc attgtccaga tttttctttg attgtaaaat    3540
atattttac tttttagtct tctaatttaa taaatgatcc atataaaaat agagaaataa    3600
agtcctttaa gggaaggttt                                                 3620
```

<210> 512

<211> 4774

<212> DNA

<213> Homo sapiens

<400> 512

```
attccccagg ctgagagtac gcgagggcgc agcagcggca aggggctgga actggggtcg      60

gggctgttgg gctcctgctc ggggtgcccc ctctctggcc cgatttccgg gcccgctcac     120

catccgggac ccactcagtt gggacgcctc cacctcgctg cccccacagg aaccccaaga     180

tgggccgggg gctccggggc actgtcaggg gtggccggcc acaggttgcc aagcccgacc     240

tccccagact ccagagccag gtgcacacct gccaggtgaa ggtgagattg aagataacca     300

gctccccaca tccctgcag aacaagtgga gcagggatgg aaccagcaaa cagaccgcga     360

tgattctgaa acgctgtccc agcagagtga aagtggatca gacacaaaaa ctgacccctt     420

tgaaagtgcc tctgacacag agtccttgtc tgggtacctc ccgaggggag tcttccaccc     480

tctaagaggt actcccgtag atatagaagc accttgggaa taccctgatg tctcagcaac     540

tggaccccct caggagcagc atttgaccag tgttcctggg cttcatgcaa aggaagaact     600

cgatttgtcc cctagcttag aggatgactc ttgcaaaaat gggtggcgag cctttgccac     660

agttgctgga gaacaggagg caggacacct ctgggactgc gcgaccagcc tggagcgaga     720

gtctttgctg gcaggggttc cccgacacac agggtgctgc ttacagaggg ccacagacag     780

cagtggtccc gagccagtac aggggggtggc tgttcaagac ctcagagggc tctccagtgt     840

ttctcttcag aaatccaggt ctgagagcta tctgggcatc ccagtggtct ggcccttcct     900

tctctggtgc tgtgaactgg gtcggagttg gccacatatc cacaacaggg ccagggcacc     960

ggtgctacct agcagaggcc cactggacaa cacagcccct ctggggacca ggacaaagaa    1020

ggaaagtact ctaggccctg caggggacac agaattgctc tggtcccagc cccactcgga    1080

tgtcccctgc cagcctcctt tgaggacatc ttgcctccta cgcaccaacc gtcaccatag    1140

tgccccagaa actactggtg acaagaacag ggcatccccc agactcaact gtgggcacat    1200

gagggcactg gtcagggccc attccatagc agggtttttca ccagagtgcc ccgaggatcc    1260

cgtgggacag aatgttgtga agtctgggac ccatgtgaag gaagggccca aaaatgaacg    1320

agatccaaga atacaaaaca tcccttcccc tgcacccacc agctgtctg gcccgattcc     1380

tgcttttcag agtggggctc cccatctgca gggtccctgc aagcctggtg ggtttcgctt    1440

gcaaagggcc tctcaggaca ctcctggggg aaaaccagtt aagacaggat tccaggtcat    1500

gtctggtggc ttcatgcctc acctcagagt tagtgaagct cagtgcagag gaagtgcctg    1560
```

●

```
agcccgctga gtgcaagtca gagcaaagcc cagaaagcag aacccaggaa ccccaaggca   1620

cccagctcgc accaagagct gctgatgaga gagagacaca gaagcacctc tggggcattt   1680

ctgtccaggc aggaaaccaa accagtaatt acacatcaaa gtatgtgctc agcgaggaaa   1740

gcaagtcacc taccagggcc aagttcccac ggcagcctag cagtgagggg acccaggtgt   1800

ggagtggaga cttgatgggc tgcttggaag tgagtgacag ttcagatgcc cctgagacca   1860

cccagaaatc aagcgcaata gacacttcaa aggcagccga agaagccatg gttctagacc   1920

ccaactacag ggaacaggct ttgcaaggtc tttcagaatt caaggcagcc acggtgtctc   1980

actgcggccc tggggctgag gagggtgaac aggggcctgg gggtgccggg ggccggcagc   2040

tggagcccaa agcaggcggc gaggcctcga ggggcagggg cgccctcatc attgtagctg   2100

tggagcagaa aggtcttcag gccagcagga gcaatgcggg gcctgttcca gaaacactgc   2160

cccgtgactt tcctaaggaa agaccagaat ctcccttgag cactggcgag accccctgtg   2220

agtctcccac tagggggaaa acaccagccg gtaatgagtg tgagttgcca gcagccccca   2280

tacagggagc tggcgatggg gctcttcagc gggtggccca ggccgcagag cttgggagag   2340

tgctggtccc ccaagctgct tcggaagaga cgccgagcac agaggagccc ccgggagaga   2400

gactgcgtgg ggagagccgg agctccgggt caggggagcg tggcccggag gaggcccccg   2460

aaggcggtgc tgcagcagcc cggggccagc gccccgcgt ccccgccttg gagccgcccc   2520

agccgccacg cgggctccgc aagggcgcgc aggagcctgg gaagcgcccg acgttttcca   2580

aggtgacctc cttcaggaag ggcaggccct tggccactga gagcccagga ggggtcccgg   2640

ccccgaccac cgagggtcgc cgctggggct cttcaggccc cgaggggctc cccagggaga   2700

atccgcccgc tgcggccggt cgggacgcac cgcctctgca ccacggggac gccagcgcct   2760

ggcccgagtt tgtcccgcag gctgcaggcg acaggactgc agggccggca ggagcggggc   2820

acacggggac ctcaggggat cttggtagcc gagggccttc ctctgagagc tgcaacgcaa   2880

agagactcaa aacaacggag aaaaaactca gggcaaggtt ggccttggct cataagacct   2940

tttcaaactt tattgagtcg atagttctag agaaagagaa cacccatgaa cgttccccaa   3000

gttctcccaa gggcgagaag gagaagagca ggctgcgcca gggttcctgg cgggcgtttc   3060

tgaaaagcaa agatgccgga agccccaaaa agcccaccct agtgagtctg cctctaggac   3120

ccgaagttct ctccccagca gagaccgaca gccactgtga ggaacgggcg gaggacaaag   3180

agggctatgt ttttagcgat cactgggcac ccccacttgc ctccacacct ttgtcctcca   3240

gtttagtttc tccagaacac aggaggaaaa gtgaaccgac catcaagtgc acagccaccc   3300
```

aggaaggcgg taggtaccta ccttcaggta tctttccgga aaagtcctgg ctggcgtccc 3360

ccggcagccc tcgggcccag caggctggaa tcgcacacac cctgccttcc agctctgcct 3420

gctgcctggc atatgaaaac cccgggacgc cctgcagacc cacgagcccc aagcccctga 3480

gtcccaggcc tagtgctcag cggatgggtc tccactaccc cgggaggggt agcgccatct 3540

ccatggtttc tcttggaagc tacagctacg tggacagcag ttcaggggac cctgaaagac 3600

ccaagattcc caagggccag accagtttcc tgctttctct gcagacgcta aaccaagatg 3660

agcagaagga agagagcagg gaaggaggcc agggtccgcg cggcttgggc acagtgccct 3720

ggctcaggga ccttcctggg agtgagaacc acatgccctg ggaagaacca gcaggtgaga 3780

agcccagttg ctctcacagt cagaaggcgt tccacatgga gcctgcccag aagccctgct 3840

tcaccactga catggtgaca tgggccctcc tctgcatctc tgcagagact gtgcgtgggg 3900

aggctccttc acagcctagg ggcatccctc accgctcgcc cgtcagtgtg gatgacctgt 3960

ggctggagaa gacacagaga aagaagttgc agaagcaggc ccacgtcgaa aggaggctgc 4020

acataggggc agtgcacaaa gatggagtca agtgctggag aaagacgatc attacctctc 4080

cagagtcttt gaatctccct agaagaagcc atccactctc ccagagtgct ccaacgggac 4140

tgaaccacat gggctggcca gagcacacac caggcactgg tgagttacgc gcctctctct 4200

tttgctatgt actctggatc ctggcatgaa ggacaagaag ctagtgctgt tggcagctgt 4260

atccacttgc ctggtagaag tagcttgaag gtgagagaga taaacaattg tcctcttcct 4320

tcagttaggg aggagtgcct actacccaaa gaaagggaat tattggctgg gcacagtggc 4380

tcatgcctgt aatcccagca ctttgagagg ctgaagcagg cggatcactt gaggtcagga 4440

gctcaagacc agcctgggca acatggtgaa accccatctc tactaaaaat acaggccggt 4500

tgcggtggct catgctataa tcccagcact ttgggaggcc aaggtgggcg gatcatatga 4560

ggtcgggagt tcgagaccag cctgaccagc atggagaaac cccatctcta ctaaaaatac 4620

aaaattagct gggcatggtg gcacatgcct gtaatcttag ctactcggga ggctgaggca 4680

ggagaattgc ttgaacctgg gagtcagagg ttgcggtgag ccaagatcac gccattgcac 4740

tccagcctgg gcaataagag caaaactccg tctc 4774

<210> 513

<211> 3717

●

<212> DNA

<213> Homo sapiens

<400> 513

gtctgaggtt	tggtgactgc	ggggcaggcc	gggggcagct	gtctgtctgg	ctctttttga	60
cagcccccag	tgcgaaaggc	tgccagcatg	tcatcagtga	gccccatcca	gatccccagt	120
cgcctcccgc	tgctgctcac	ccacgagggc	gtcctgctgc	ccggctccac	catgcgcacc	180
agcgtggact	cggcccgcaa	cctgccgccg	ctgcacagga	ttggcacagc	tgcactggcc	240
gttcaggttg	tgggcagtaa	ctggcccaag	ccccactaca	ctctgttgat	tacaggccta	300
tgccgtttcc	agattgtaca	ggtcttaaaa	gagaagccat	atcccattgc	tgaagtggag	360
cagttggacc	gacttgagga	gtttcccaac	acctgtaaaa	tgagggagga	gctaggagaa	420
ctatcagagc	agttttacaa	atatgcagta	caaattttag	atgctgtgag	cctagaggag	480
cggttcaaga	tgactatacc	actgcttgtc	agacaaattg	aaggcctgaa	attgcttcaa	540
aaaaaccaga	aaacccaagc	aagatgatga	taagagggtt	atagcaatac	gccctattag	600
gagaattaca	catatctcag	gtactttaga	agatgaagat	gaagatgaag	ataatgatga	660
cattgtcatg	ctagagaaaa	aaatacgaac	atctagtatg	ccagagcagg	cccataaagt	720
ctgtgtcaaa	gagataaaga	gactcaaaaa	aatgcctcag	tcaatgccag	aatatgctct	780
gactagaaat	tatttggaac	ttatggtaga	acttccttgg	aacaaaagta	caactgaccg	840
cctggacatt	agggcagccc	ggattcttct	ggataatgac	cattacgcca	tggaaaaatt	900
gaagaaaaga	gtactggaat	acttggctgt	cagacagctc	aaaaataacc	tgaagggccc	960
aatcctatgc	tttgttggcc	ctcctggagt	tggtaaaaca	agtgtgggaa	gatcagtggc	1020
caagactcta	ggtcgagagt	tccacaggat	tgcacttgga	ggagtatgtg	atcagtctga	1080
cattcgagga	cacaggcgca	cctatgttgg	cagcatgcct	ggtcgcatca	tcaacggctt	1140
gaagactgtg	ggagtgaaca	acccagtgtt	cctattagat	gaggttgaca	aactgggaaa	1200
aagtctacag	ggtgatccag	cagcagctct	gcttgaggtg	ttggatcctg	aacaaaacca	1260
taacttcaca	gatctttatc	taaatgtggc	ctttgacctt	tctcaagttc	tttttatagc	1320
tactgccaac	accactgcta	ccattccagc	tgccttgttg	dacagaatgg	agatcattca	1380
ggttccaggt	tatacacagg	aggagaagat	agagattgcc	cataggcact	tgatccccaa	1440
gcagctggaa	caacatgggc	tgactccaca	gcagattcag	ataccccagg	tcaccactct	1500

tgacatcatc accaggtata ccagagaggc aggggttcgt tctctggata gaaaacttgg 1560

ggccatttgc cgagctgtgg ccgtgaaggt ggcagaagga cagcataagg aagccaagtt 1620

ggaccgttct gatgtgactg agagagaagg ttgcagagaa cacatcttag aagatgaaaa 1680

acctgaatct atcagtgaca ctactgactt ggctctacca cctgaaatgc cgattttgat 1740

tgatttccat gctctgaaag acatccttgg gccccgatg tatgaaatgg aggtatctca 1800

gcgtttgagt cagccaggag tagcaatagg tttggcttgg actcccttag gtggagaaat 1860

catgttcgtg gaggcgagtc gaatggatgg cgagggccag ttaactctga ccggccagct 1920

cggggacgtg gtgaaggagt ccgcccacct cgctatcagc tggctccgca gcaacgcaaa 1980

gaagtaccag ctgaccaatg cttttggaag ttttgatctt cttgacaaca cagacatcca 2040

tctgcacttc ccagctggag ctgtcacaaa agatggacca tctgctggag ttaccatagt 2100

aacctgtctc gcctcacttt ttagtgggcg gctggtacgt tcagatgtag ccatgactgg 2160

agaaattaca ctgagaggtc ttgttcttcc agtgggtgga attaaagaca aagtgctggc 2220

ggcacacaga gcgggactga agcaagtcat tattcctcgg agaaatgaaa aagaccttga 2280

gggaatccca ggcaacgtac gacaggattt aagtttgtc acagcaagct gcctggatga 2340

ggttcttaat gcagcttttg atggtggctt tactgtcaag accagacctg gtctgttaaa 2400

tagcaaactg taggtccaaa tctcaatttt ttagaatttt aagttatgaa gtgctcaaag 2460

gtactgacac agttgatttt attcacacca ttaggggtat gcaagatgtc cctgttttat 2520

aaacataatc acaacagtaa taaacctcaa gtagtggcta gtgtttagta tagaaatata 2580

agatgttgat ttagtaaact gataaaaatc gaattcttgt cttttagtg ggatccttac 2640

tgtccctgga aagatacagc atagtggttc tcagcacagt ctccagaaca gaagcatctg 2700

tagtacctgg taacttgtta gaaatgtaca ttctcaggct ccacagcagg ccgcctgaat 2760

caaatcctgg gaggtgggga cagaaatctg tgttttaaga agccttccag gtaattctgc 2820

tgcacactca agttcaggaa ccaccggtat agaccattac cttagtggat ttacctgtag 2880

agtttattgg atcctgaaac caatcaatta cttagaacta ggcaaagatg aaagtatagc 2940

caactattct tggctatata tatattcaag tgggccgggc gtgatggctc acacctgtaa 3000

ttccagcact ttgggaggtc gaggtaggca gatcaccgag cccaagagtt caagacaatc 3060

ctggccaacg gcgaaactct gtctctacaa aaaatataca ggcgtgttag catgtgcctg 3120

taatcccagc ttcttgggaa gctgaggcac aagaattgcc tgaacccagg aggtggaggt 3180

tgcagtgagc tgggatcgcg ccattgcact ccagcctggc tgacagagcg agactgtctc 3240

taaaaaaaaa ggactcaagt ggaccctaca atgaagccta cacatcccaa tagaagcccc　3300

ttcttatgct gagggaagca gccctcagaa catgatagct tgtatccagc agagtggcac　3360

gtgctggcac acctcacaga agcaccctgg ccctggatgc ctgcaacctc agaagagtgc　3420

agctcccaga gggaggcagc catccatctg ggatggtcct aagcatggaa tcctaactcc　3480

tgattccgtc tcctatttct tgcttggcta cgccagttcc caaatctggt agatgtccat　3540

gcccatgtgc tcctgctggg actcaattca ggctgtgtat gactatgaag tcaggctcat　3600

ctgcttactg gctgtgtgaa cttttgtat cttggttttc ttcatccatg aaatccaagt　3660

aatactacct aattgttact gtggagatta agttcaaatg caatgtatag taatatt　3717

<210> 514

<211> 4233

<212> DNA

<213> Homo sapiens

<400> 514

acttccacta aactcttgtg tgcactttgg cttcaaatta atggagagtc cagggtatgg　60

tatgcccaga gagtagaata atggagagta agtcctggta ggaaatgcca gaccatgtgc　120

ggctgcttta gtttagctat agaggtcact agagagggga tgtataagtg gaagaaaac　180

acaagctgtt attttgtctt ctcacatttg gaactagatg agaggcaccc agagggcacg　240

cacactagag aagagaaaga ccttatggat gcatgtgatt ctgtaataga cctgccatca　300

aaaaagctta tagagctgta tacaacctgt gggttttcca taaggaagca gggatcagat　360

gcacatctgt tggaggctgg gggagccggc ttgcttgacc ttaatacacc tccctgctgt　420

aggagtcgga ttcctggcag tgtgttgatg ttccctgtta gagccgggct gtgggagggg　480

cagttggagc cagcggcatg tgtgtggagt gagatgcgag gcagggtccc tggctgcaaa　540

ggaggtggga ttgggggtat gggtgagtgt gggtgctggg ggatggacag aagtggaggt　600

cctctctgaa gagaaaaacc tggacaccaa agggtttaag tcctaatggc ctctgactcc　660

ctgaccctgc ctgtccttag gggaagtgct gagggtccct ccctggggaa gtcctagagc　720

tgagtctctt cccttagtaa aatctactga aaatcaggat gcccaagact gggggcttga　780

aaccctgcat attcttcacc gccttgcttg agagctttcc attttccctg cccactgaag　840

atggtccaag acatgcagta ccttcttgct tcctgcttta caccccaaga ggggattgaa　900

ttctttatgt atgtgtctgc cacctttgct agattgtaag ctccctggaa ttgtgccata　960

gtcatctgaa tacttgtagt ctttagatat gtatgtgcct ggcctggcat gtagctggta　1020

ctcaacaccc tttgggatcc aatctgtggc tcagggtatg gggaagagat gacccagacc　1080

cctctagatt ctcccagtcc caaggagaac aattctgtta gggtgccttc cagcaagaca　1140

gcaggaaccc tcaccaccca ctggctccag tggtggcccc tgggctcctc cctctctggc　1200

acagggacta aacagagcca gctccactgg agggagtgcc ctctcctttc tttccaccct　1260

ttgactctga accattgtgt cactctgtcc tgaccccatt tcctccccgg ctagccctca　1320

gccatctgtg ggcagctgtg agactgagtt tggtgcctgg tgcagctcag accctggcac　1380

cgacctgctt ggccataggc atgtcctctt gtttcttcag ctgactggtg ctttttgggg　1440

tgcctctacc caggtcttct tgtcttcctg agagttctga aaccctcttc tgtggggtca　1500

aacctggctg cacatttgaa tcactttagg ggctactgaa gcatccagca tccagggact　1560

caccctactg agtcagaact tccagaggag aggtcgggaa tgtgtatatt tttaaagctt　1620

cgcagatgac agttgcggtc actcaaatgt ggagtgtgca ttagataata ttattgttgt　1680

caatgttaag ttttgtgggt gtgctcatgg cattgtgttt tacataggag aatgcccttg　1740

ctcttagaga ttcaggctga agtttttaga ggcaaagtgt ttcttacaaa cactttgcaa　1800

agggcatctt actttaaatg gtaaagcaga gcaagaaaga gagcaaatgt ggagaaatgt　1860

taacaattat tgcaggcagg tggtgaaaga aaactggctg taacagacct tctggacgat　1920

ttccatctgt tttctaagag gtggacatta ggagagaacg cagcctgaac caccaaggtg　1980

tataactcca ggaggcacca ttcacatggt tttcattttt gtggtcgggg gtatcattca　2040

catagaatac aatgtgtggg gtgcccccta gggttgtgtg acatagtggc attggcccca　2100

gccatctctc cctggatggg ctgcagagta gcagagacgc aggccctgat ctacccttcc　2160

tctttcaagg gaccgacatg gctatttgtt tttatacaga atccctagta gcccttgaag　2220

actaagggaa tggagcaatc ttaatttaaa tttaaattta atttaattta atttgagaca　2280

gggtctctgt cactcagact ggagtgcaat ggcacgatca cggctcactg tagcctcaaa　2340

ctcccaggtc caaacgatcc atccacttaa cccttcccag tagctgggac tataggtcca　2400

tgccaccaca cccagctaat ttttttttccc cccat+aggga tggtcttgaa ccctgggctc　2460

aagcaatccc cccgcctcgg cttcccaaag tccttgggat tacagacatg agccaccacg　2520

cctggcccta gagcaatttc taatgtagag cctgacagag agagaactga attggggaag 2580

tggggaggca ggaaacatga aaccctgatt cctaaaatac tttctgcgtg tcctctagtc 2640

ctggaaaatg aaatctaggg cttgaatttt tagaggaagc caggtcgctg tgtttcaagg 2700

tcgctgggac tggttgctcc tgtgtttcca tctctggagt tccctcgtgt ctggctgctg 2760

ctctctgaac cttcgcttca ccttgggggt ggccttcttg gtcctgtggg ggatgctgtt 2820

tgtcccattt cctcactgcc acctctcagc atcatagtga gctgagtgct gagcctttgg 2880

gaggagcatt gccagtgtgg ccctgggcgt gagatctgtc agaggggtgg gcttccttcc 2940

ctgtgtggct gagacagtct agtggtggcc tggcccagag ccaggaggat ggtggttaga 3000

gaggggtagc tcgcctttcc tctgtctgaa ttccagtctg gaagagctt caggaacagt 3060

gcctgcttgg atcaccctgg gacctttcct tctctttcct gtgactttgg agtcctctga 3120

gagatttgac ctaaggaatc agtaggttgg aatcaaggaa tcccggagct ggaagggact 3180

gtgtgtggtt ttcttgccat ccttgcccct gccttacaga tgccaatcca acctggttag 3240

ttccaaaacc cagtcctgtg tctgaaggat actaaggagc acaccaccta catcctgacc 3300

acccatctcc atgtctgaaa attccccacc tcccagaagg ttctgccctg acattccagt 3360

tcaagctcag tggaaatgat gggaatttgg aacttgagga acatagtagg ggtgatggat 3420

ccataaacat gtcaattttg aataaaatat cttaagcctg tgtttgagat atacactggt 3480

tgctattggg agccaatagc aaatagcaaa ttggaacaat ttgaaccaag tcacggaggt 3540

atcacatacg tggtcatgaa tggttggagg tgagagggag agcagggcag gagagagtct 3600

tatagagaaa tcagagagcc tttgaaatat cttaggcagg aagcgaggtg atcagattta 3660

cattttagga agagccctca ggatgttctg tgaaaaagcc ttgaagaggc caaggttagt 3720

aggggggaagg actattagga ggccattgta atagcccaaa tgagagaaga taagggcttg 3780

aattagggca accacagtta ggatagaagg aaagattagc tttgggaagt attaaggagg 3840

aaaaggtggc aggccttggc aattagagag aggggtgaaa ggaaggggga ctctaggatg 3900

actgcaggat ttttagcttg ggggactggg tggtgccatt caccacaatg gggaaccagg 3960

agcaaggagc agattgtggg gaggaaagaa gatgatagtt gagttttgga catttggatt 4020

ttgagatatg agtgggcatg taaacttgaa ggagagatac atatttggaa tcatcaacat 4080

gtgagtagta tggataggaa acaagaatag atgagattgc ccaagcagag ggggtagagt 4140

taacagtaag ctgagaatag aatcctgagc caacaccaac atttcagggg tggacaaagg 4200

aagaggaaga caaagaagga ggagatggag aac 4233

<210> 515

<211> 3518

<212> DNA

<213> Homo sapiens

<400> 515

ttttgaattc actttgagct gacggttttg tccaaggtgt tggatgaaga gcacttgaga   60

ataaactgcg gtcgcttgcc ccagcattga agctcagctc tcagaacatg tcatctggag   120

gctggtttca ggatccttga atgagtacgg tgctcaagta ttgctgagct gcagtcctgg   180

ttactactta gaaggctgga ggctcctgcg gtgccaggcc aatgggacgt ggaacatagg   240

agatgagagg ccaagctgtc gagttatctc gtgtggaagc ctttcctttc ccccaaatgg   300

caacaagatt ggaacgttga cagtttatgg ggccacagct atatttacgt gcaacaccgg   360

ctacacgctt gtggggtctc atgtcagaga gtgcttggca aatgggctct ggagcggcag   420

cgaaactcga tgtctggctg gccactgcgg ttccccagac ccgattgcga acggtcacat   480

tagtggagat ggcttcagtt acagagacac ggtggtttac cagtgcaatc ctggtttccg   540

gcttgtggga acttccgtga ggatatgcct gcaagaccac aagtggtctg acaaacgcc   600

tgtctgtgtc cccatcacat gtggtcaccc tggaaaccct gcccacggat tcactaatgg   660

cagtgagttc aacctgaatg atgtcgtgaa tttcacctgc aacacgggct atttgctgca   720

gggcgtgtct cgagcccagt gtcggagcaa cggccagtgg agtagccctc tgcccacgtg   780

tcgagtggtg aactgttctg atccaggctt tgtggaaaat gccattcgtc acgggcaaca   840

gaacttccct gagagttttg agtatggaat gagtatcctg taccattgca agaagggatt   900

ttacttgctg ggatcttcag ccttgacctg tatggcaaat ggcttatggg accgatccct   960

gcccaagtgt ttggctatat cctgtggaca cccagggggtc cctgccaacg ccgtcctcac   1020

tggagagctg tttacctatg gcgccgtcgt gcactactcc tgcagaggga gcgagagcct   1080

cataggcaac gacacgagag tgtgccagga agacagtcac tggagcgggg cactgcccca   1140

ctgcacagga aataatcctg gattctgtgg tgatccgggg accccagcac atgggtctcg   1200

gcttggtgat gactttaaga caaagagtct tctccgcttc tcctgtgaaa tggggcacca   1260

gctgagggggc tccccctgaac gcacgtgttt gctcaatgggg tcatggtcag gactgcagcc 1320

ggtgtgtgag gccgtgtcct gtggcaaccc tggcacaccc accaacggaa tgattgtcag 1380

tagtgatggc attctgttct ccagctcggt catctatgcc tgctgggaag gctacaagac 1440

ctcagggctc atgacacggc attgcacagc caatgggacc tggacaggca ctgctcccga 1500

ctgcacaatt ataagttgtg gggatccagg cacactagca aatggcatcc agtttgggac 1560

cgacttcacc ttcaacaaga ctgtgagcta tcagtgtaac ccaggctatg tcatggaagc 1620

agtcacatcc gccactattc gctgtaccaa agacggcagg tggaatccga gcaaacctgt 1680

ctgcaaagcc gtgctgtgtc ctcagccgcc gccggtgcag aatggaacag tggagggaag 1740

tgatttccgc tgggggctcca gcataagtta cagctgcatg gacggttacc agctctctca 1800

ctccgccatc ctctcctgtg aaggtcgcgg ggtgtggaaa ggagagatcc cccagtgtct 1860

gcctgtgttc tgcggagacc ctggcatccc cgcagaaggg cgacttagtg ggaaaagttt 1920

cacctataag tccgaagtct tcttccagtg caaatctcca tttatactcg tgggatcctc 1980

cagaagagtc tgccaagctg acggcacgtg gagcggcata caacccacct gcattgatcc 2040

tgctcataac acctgcccag accctggtac gccacacttt ggaatacaga atagctccag 2100

aggctatgag gttggaagca cggttttttt caggtgcaga aaaggctacc atattcaagg 2160

ttccacgact cgcacctgcc ttgccaattt aacatggagt gggatacaga ccgaatgtat 2220

acctcatgcc tgcagacagc cagaaacccc ggcacacgcg gatgtgagag ccatcgatct 2280

tcctactttc ggctacacct tagtgtacac ctgccatcca ggctttttcc tcgcagggggg 2340

atctgagcac agaacatgta aagcagacat gaaatggaca ggaaagtcgc ctgtgtgtaa 2400

aattccttca gatgtctttt tcgtcaattc actgtggaag gggtattatg aatatttagg 2460

gaaaagacaa cccgccactc taactgttga ctggttcaat gcaacaagca gtaaggtgaa 2520

tgccaccttc agcgaagcct cgccagtgga gctgaagttg acaggcattt acaagaagga 2580

ggaggcccac ttactcctga aagctttttca aattaaaggc caggcagata tttttgtaag 2640

caagttcgaa aatgacaact ggggactaga tggttatgtg tcatctggac ttgaaagagg 2700

aggatttact tttcaaggtg acattcatgg aaaagacttt ggaaaattta gctagaaag 2760

gcaagatcct ttaaacccag atcaagactc ttccagtcat taccacggca ccagcagtgg 2820

ctctgtggcg gctgccattc tggttccttt ctttgctcta attttatcag ggtttgcatt 2880

ttacctctac aaacacagaa cgagaccaaa agttcaatac aatggctatg ctgggcatga 2940

aaacagcaat ggacaagcat cgtttgaaaa ccccatgtat gatacaaact taaaacccac 3000

agaagccaag gctgtgaggt ttgacacaac tctgaacaca gtctgtacag tggtatagcc   3060

ctcagtgccc caacaggact gattcatagc catacctctg atggacaagc agtgattcct   3120

ttggtgccat ataccactct cccttccact ctggctttac tgcagcgatc ttcaaccttg   3180

tctactggca taagtgcagc ggggatctct actcaaatgt gtcagggtct tctacggatc   3240

aaactacaca tgcgttttca ttccaaaagt gggttctaaa tgcctggctg catctgtatg   3300

aaatcaaggc acactccagg aagactgccg cgtcgcgcca acacgtcata ctcaatgcct   3360

cagactttca tatttctgtg ttgctgagat gcctttcaat gcaatcgtct gggctcgtgg   3420

atatgtccct caggtgcggt gacagaatgg tggcaccacg atatgtgttc tcttgtgttg   3480

tttttccttt ttaaaccccc atgaacacga atactctg   3518

<210> 516

<211> 3632

<212> DNA

<213> Homo sapiens

<400> 516

agtcccagcg cccgggcgcc gccgccgcgc gccccgccgc ccatctacct cagattttta   60

acaaataccc cggctcgcac tacccggaga tcgtgcgctc gccgtgcaaa ccccctctaa   120

actatgaaac tgccccgctc cagggaaact acgtcgcctt cccctcggac cctgcttatt   180

ttcggagcct gctgtgcagc aaacacccgg cggcggcggc agcggcggcg gcggccgccg   240

cgggggccac ttgcctggag aggtttcatc tggtcaacgg cttctgcccg cctccgcacc   300

accaccacca ccaccaccat caccaccacc accaccacca ccgggcccag ccgccgcagc   360

agagtcacca ccccctcac caccaccggc cgcagcccca tctgggcagc tttcccgaga   420

gctgcagcag cgactccgag tccagctcct actcggacca cgcggccaac gactcggatt   480

ttggctccag tttgtccagc tccagcaatt ctgtgtcctc agaggaagag gaggaggagg   540

gagaggagga ggaggaggaa gaggaggagg agggggggcag cggggcctcg gattccagtg   600

aagtcagctc ggaggaggag gactcgtcca ccgagtcgga ctccagctcc ggctccagcc   660

aagtgtcagt gcagagcatc cgattcaggc gcaccagctt ctgcaagcct cccagcgtgc   720

aggcgcaggc caacttcttg taccatctgg cctccgccgc cgctgcaacc aaacccgctg　780

ctttcgagga tgccggcaga cttcccgacc tcaagagtag tgtcaaagcg gagtcgccgg　840

cggagtggaa tctgcagagc tgggccccca aagcatctcc ggtgtactgc ccggccagcc　900

tggggagttg tttcgctgag ataaggaacg atagggtatc tgagattaca ttcccacact　960

ctgaaatttc caatgctgta aagagaactg acctgacaat taactgcctg gcagaggggg　1020

cctcttcacc tagcccaaag acaaacaatg catttccaca acaaagaata ctccgagagg　1080

ctaggaaatg cctacaaaca actcctacta cacactgtgc agataacaac acaatagctg　1140

ctaggttctt aaataatgat tcttcaggag cagaagcaaa ttcagaaaaa tattccaaaa　1200

tccttcattg tcctgaattt gctacggatt tgccctcttc gcagactgat cctgaagtga　1260

acgctgcagg agcagcagca actaaagccg agaatccctg cactgacaca ggcgacaaga　1320

cattgccatt tctgcacaat attaaaatca aagtagaaga cagtagtgct aatgaagaat　1380

atgaacctca cctttttaca aataagctaa agtgcgagtg caaggataca aagggtgagt　1440

tttacagtgt gactgagagt aaagaggagg acgccttgtt aaccacagcc gaggaaggtt　1500

ttgcatgccc tgaaaaagaa actccttcct taaatccact ggctcaaagt cagggccttt　1560

catgcacttt aggttctcca aaacctgagg atggggaata taaatttggt gccagggtga　1620

gaaaaaatta ccggacacta gtactgggaa agcgacctgt ccttcagaca cctccagtca　1680

aaccaaattt gaaatcagct agaagccctc gtcctacagg taaaactgag acaaatgaag　1740

gaacactgga tgattttaca gttataaaca gacgcaaaaa ggtagccagc aatgtagcat　1800

cagcagtgaa aaggccattt catttcatgg caaattttcc ttgtccacca tcactcatta　1860

ttgggagaga tggggatttg tggccggcgt attccttaaa caccactaag gattctcaaa　1920

ctcctcacaa ggcccatcct atatggaaat ggcagctggg cggttctgca atacctcttc　1980

cacctagtca caaattcagg aaatttaatt cataaaaatg ttttggaaga tattttcttg　2040

aaccatatta ccttcctttt gttgtaaact gcacaggatg gtttgtacaa gtccattaat　2100

gtgttacacc ccctttggag tcctggttta tcgcattttg aagacagaaa tcggattact　2160

ttttttccgt tgcgggtttt tttttttttt tctggagtag ggtgggggcg gggtaggaga　2220

agggttggtt tacattccac agactacttc aggctaaaga ctcaagtaaa actcagttat　2280

tacggtagag ctggaacact ttactgtttc gatgctaata atgcacccgg tacctcaatt　2340

caactgctac aaataaatgt caaaaggttg aataataaat attacaatga gccattaagt　2400

ttatgcacta gatttcagag ctgaaagtgt aactgttaat tcagtgaaag tttgttaggt　2460

tacatggtta cacagtgagg tgaggtgagg tagcaagaag tttctgtgag cccaaaatgt 2520

tattttctgg agctcttgtt tgtggggtat cttttctttt tgactcccct tattccctct 2580

ccaagagtag ttgcacttaa cttttttttt tttttttagt ggaaagattg gggtgtgagt 2640

cctgattaaa tgctagtaaa agctgcctca tacatactga gtaaaataaa tacggaattg 2700

tatttttttt gtaaagggtg tgattttact tttaaagcca ctcctttgca acaggaaaag 2760

tctgttttgt gttctcaccc aaaggtttta aataaggtga ctcttactat tgtcctgctt 2820

atcttgtggc ctgaacatga ctcttcaaac tcccaaaaca attgaaatat ttcttttttt 2880

tttttttttt tttggagaga gtctcgctgt gtcgcccagg ctggagtgca gtggcacaat 2940

cttggctcac tgcaacctcc acctcctggg ttcaaacgat tctgctgcct cagcctcctg 3000

agtagctggg attacgggcg cgtgccacca tgtccggcta attttgtat ttttagtaga 3060

gacggggttt caccatgttg accaggctgg tcccgaactc ctgacctcag gtgatccgcc 3120

tgtctcggcc tcccaaagtg ctgggattaa aggtgtgatc caccatgccc gggctgaaat 3180

atttctcgta atagcagaat atttcatggc cgaactcttg atagtgacaa atcagtaaat 3240

acaaccaaga aaagaaaat gaggggtcag agttgcaata ccccaaatga aaaataacag 3300

tttttttcagg gcttttggt accagaactc aggcacttgg attttatgac cttatacttt 3360

ttctgcatct ctctaaaact tgtgttttca gaccatcctg tgtatagagc aggagagttt 3420

ctactgcaag tgacaatcag aggtgactat ctatatttgc acttaaaatc aaagtagttc 3480

aacatgcaaa tgctagggtc tagccctggg taagggccat gctggtgtac tgtgttgtga 3540

tgatggaagc agtaaatcaa aattatggaa atttgcactg ttgaaaagca tgctttagct 3600

ttattttcaa ttaaaaacac tgtttaaaat tc 3632

<210> 517

<211> 3847

<212> DNA

<213> Homo sapiens

<400> 517

actcacacac gtacacacac acattgacac acacacacat tcacacactc tcacacacac 60

tctcacatca cattgatcta gggatttcct caggttgaaa cgggcctgac catctgcaaa　120

tgggcaggta agtccaaatg cagaactgat cttcacttag ggcttcagac aaaatctcaa　180

ttgatgtaaa agcccattaa ccgcccccct caaagtaaaa caacagcaac aacaacaaaa　240

ggtgtttcga attagttttt gaaactaaaa gtatttcaag aaattcactc catgaatgag　300

tcatgacatg gcacagtggg aagaacaact tcctggggcc aagaaaacct gagctgaaag　360

tcagtagtgc ctgtgagcag cccctggacc tggggcaact cactgacctc tctgagccca　420

gcttcttagg ggcttgtgag catcgtccct tgccagggcc tctgcacacc gcctggtctg　480

gaacagggac accttgggtg ctcctccctc caagccttcc caccgccctg gtgcacaagg　540

cacctacagc tctggagctc tcagctacag ctgaggtgct ctgggctctc ctgcggggcc　600

gagggcttg tgacgctggg cctcttccta cagtcactca tatccacgtg gaatgaggtt　660

tccaatatcc ataggcaaat atgatccacc cacctgcctg cctaccttct gaagtcacca　720

tttccctgac ataattgcat cttacagatc ttacagctgt ttcctgtggc ccacttgatg　780

gttggtggca ccttggcatg tccaccaggt agcacctcat gctgaacatc acagctggcc　840

ccaggcaggc ccttcccttc ctcctcactc tgtctacatc actggatcag ggaagctggc　900

ttcattcaac ccttccttct gtaggtcctg aaaggtgagg tgatggctgc ttctccactc　960

cccacccctc tttgttgtgt aagtgtgatt ggtcacacat cacagaaaac tcatatagca　1020

gatatttgcc acgtaacgta gaatttgaaa gcacatctat gccataggaa acggctaatt　1080

gccttgactc aggagtgccc ccaagagcct gtctcattgg gaatccttca gctgtcccaa　1140

gaggaaacca ttgcgttgac ttttgtgaca gtcatgtact tggttttaat gatgtttatc　1200

acttacttac aagttcttaa gcaccagagt tgagttgggc ctctttctgc ccctgggatc　1260

actgggcatg tcctcgtcag tgcctgattt cttttgctca gtgtgtttgg gggatccttc　1320

tatttcattg cctggtcttc gctcatttcc tattgcagtt ccgtgcatgg cccattacat　1380

gaacacaacc attgttttct ctcttccatt gttttctctc ttctgctatt gatggactcg　1440

gggttgcttc tgatctttgg ctcttaggaa ggttgcccca taaacatcct cttacctgtc　1500

tccaggtgca cctgtgcaca gtgcctgcca gaaaagtacc tggggggtgga actgagtttc　1560

ttcactttgg caggtgctgc agacggtcag cttctcttct caccagcagt gggagagccc　1620

cctgtgctcc agccctcccc agagctgggg atcatcagac ctgagagcca caggtcctcg　1680

tccatgtgta gctgaccaga tgtgaggatg ctctgcccat gtttggggac agcttctttt　1740

cctctcccca tctggctccc cgctgctccc tgtgtgccca ccccacctgc cccggtgttt　1800

●

```
ggctggcctc ctcttcctgc tgagccagtg cctctaagga gctgccagca gtggggatgc   1860

gccaggcctc ctccagttct ccagggcgca ggctttctgc agcgaccatc ccgggtctca   1920

tcgagctctg caccctgcac ccgcagcgct gacctcacgg agtctgcccc tctgctgcag   1980

cttgccctgg cctcctgcct gcctctttct gatcctgtcg tcttttgcct ccttggcctc   2040

cctcctggcc ttgctgctgt ctcccttcct cagcttgtct tttggggaat ctctaacctt   2100

ccagaactcc ctctgcccat atggagcccc gatctgggca gcaccacccc tttgcaaaac   2160

tcccctccgt ccacacctcc ctggggcttg caggcaccat ccaaggaaca gcaggactca   2220

ccatctcagt gagccagggc agggtagccc gggtctgagg cagcgtggga ttgggagtct   2280

gagccatggc gtgggctatg ggacctgggc caggcagcaa atgtctctaa gctctcctgt   2340

tctcatccat aaaagaacat aattataagg attcagtgag agaatatcca cggcagtgtt   2400

tgggagtgat gtgctacctg gctcagaagt cactgtgaac atcattgtcc ctttctgtaa   2460

tgtagctttc tgtcatgcat ctagctagta tgtaaggaga acctggtgca cacaggctgt   2520

tacttcacct tatcttgttg tggagtgctc gtaactgccc gccaggaggt aggcaccgtg   2580

ttcctctctg ctttacagaa gaggaaaccg aggcctagga aggggggctgg ccttggctga   2640

gatgtcaccc ctgatgacag gcaaagctgg gaatctcatc tctgtggcca gactcccagc   2700

accatcatgc acggctttct ggagcaaagg cagaatgatg aggagatcac aggcacggag   2760

gcaggagtgt gaaagcatca gaatatgcca ccccaaagga tgccgctttg acataaggat   2820

tattttgagc tgaaggcaac tgagaaacag ccagatgcag aaaaagctct ctactcccca   2880

tgctcccatc tgcctcaagg gagggcagaa atttatcttt tttttttttt gagacagagt   2940

ctcactctgt cacccaggct ggagtgcagt ggagcgatct tggctcactg caatttcagc   3000

ctcctcggtt caagagatcc tcatgcctca gatccccaag tagctgggat gacaggcatg   3060

caccaccgca ctcggctaat ttttgtattt ttagtagaga cggggtttcg ccgtgttggc   3120

caggctggtc ttgaactcct gacttcctcc ttcaacacct gcctcggcct cccaaagtgc   3180

tgggattaca ggcatgagcc acggtgcctg gcccagaaat tcattttgt gaaggattcc   3240

tcctcccctc tcctgtacca gaaagaagcc acaactcatc accggagatg gcaccaacct   3300

gaatagtcat aacctttaac aacccttatc ttccattatt tcccccgtat gtatcccttt   3360

ccacatttgc catccctaga agctcaaaac atttttcctt tgtcttgtca tgtctccaca   3420

attttttat tttttttgaa acagagtctt gctctgtcac ccaggctgga gtgcagtgac   3480

acgatctcga ctcactgcaa cctccgcctc ccgggttcaa gtgattctcc agcctcagcc   3540
```

tcctgagtag ctgggattac aggcatgtgc caccatgccc agataatttt tgtattttta 3600

gtagagatgg ggtttcacca tgttggtcag gcttctctca atctcctgac ctcgtgatcc 3660

tcccgccttg gcctcccaaa gtgctgggat tacagacatg agccaccatg ctggccacat 3720

ctccacaatt tatggctctt tgttaagatg ttacacaggc tccaaatgct aaccacctca 3780

gagagtcaca tttctttgtg aatgcccacg catatgtata taattaaatc tgttcttttc 3840

tcttgtt 3847

<210> 518

<211> 4000

<212> DNA

<213> Homo sapiens

<400> 518

atgagcctca gtttcctcat gtaacatggg gatagtaata gcacttactt tctgcggtgg 60

tgattgttag taatggaggg agatggtact tatatgtcaa atactgtgct aagcaatttg 120

taagtactca atgactcttg gcttttgttg caccgagcct tttactgggc tgtctgccct 180

atgcagagca cagctgtaca tcatcagtgt tgggttgaat gttgagctga actatgttgc 240

cacctgggcc actaaaatgc ttttttcttt ttctttttct tttttttttt ttgagatgga 300

gtttcgctct tgctgcccag gctggagtgc aatggcatga tctcggctca ccgcaacctc 360

cgcctcccgg gttcaagcga ttctcctgtg tcagcctcct gattagctgg gattgcaggc 420

aggtaccacc atgccccgct aattttgtat ttttagtaga gatggggttt ctccatgttg 480

gtcaggctgg tcttgaattc ctgacctcag gtgatccgcc tgcctcagcc tcccagagtg 540

ctgggattac aggtgtgagc caccgtgccc ggccaactaa atgccttctt tcccataacc 600

cagactttct gcttgaatcc ccatgaaagt cctggcttca gccaataact tgggcgaagg 660

tgcattgcaa gtgaggcaac tggtgtgatc aaagcaggtt tgtgtgttca catatgtgta 720

tatatggagg tgggcggttt aggaggaggc ttggtgtcag gactacttga gaggatgcta 780

aggacataat cagatatttg ggggactagg aatataggaa tttaagggga ttgctctgat 840

tatgtgaaac tggttgatga aaatcttggt gtggtgggta acaatatgga cggagggggc 900

tgggcccagt agctcacacc tgtaatccca gcactttggg aggtcaaggc aggaagatcg   960

cctgagctca ggagttcgag accagcctgg acaacatagc gaggcccaat ctctacaaaa 1020

aaatttaaaa aattaggtgg gcatggtggt gcatgcctgc agtcccagct gttcgggagg 1080

ctgaggtgag gactgcttga gcctgggagg tccaggctgc agtgagctaa gatgggccac 1140

tgcactccag cctgggtgac agagtgagac cctgtctcca agaaataaaa attaaataat 1200

taaagaatat gggcagaagg gagggtatgg acatgtaagt atgggggaga aatcttaaac 1260

ttgttaacta acttgctctt gggaagaagt caaacattat ttcagtatgg atggagtagt 1320

ccctgagaaa atcaggaaga ataggtttgc agcaagacag aatttgatta tttcttcaaa 1380

tgaggcaagc cagagctttt agcaggtcat gagtgatcac agtgtgggat tattcacata 1440

ctcagcctct ctccagtgct tgtttctcct gctgccctaa tagcagttgt ttccctttga 1500

tagtcttcct ggagcttggg cttgtcactg tccccagacc tggaaggtaa gctcctgaag 1560

cctggtatgc tagttacttt tcagaatatc ggccttgata ccactggtgc attcatgata 1620

gaggccgtgg tctagagcct gccccaaccc tgcaggggaa cagggaaaca ttggctttct 1680

gagctacggg atttccagga aggtttgttc tccagccaga acatattggg tttctgggga 1740

ctcttcttgc caaaattcac tttcattgag caagcattta gcactgccag aatgttgggg 1800

agagaaggtt gctgaaatcc agttcatcct aaggcctcag gatgttctgt gaataggctt 1860

tgtgtccatc atttagcacc ctccccatgg cttggtccag ggacccctgg tctccttgag 1920

gagagaatta ccctaccttt ccctttctcc tctgggctta gacttagcag ttctgggaga 1980

ggggtatgtt tggtattggg aatgctgcct agggtatggc cactgtggag gtacagctaa 2040

aggctttctc ctcattaact ctaagacttt actggtttgg ctgtcatagc atgatttgaa 2100

tttcctgtgc ttttacatat tccatgtttc tttcctgact ttattacaag taaacagatc 2160

cattgttctg tgccatttaa ctagttagaa cacgtttagc tgcatttagc agaaagcgct 2220

aacttaagcg gctgaaatgg aagggaactt ggtcttacct ttttgggaag ctgttttcca 2280

gaagccaccc agtttgttgt ctcgtggcct aaaattgggt cacatgtcta tttttgaatc 2340

aattgttggt aaagggaata gaattattga agaaccagaa tttaaccctg taagttatcg 2400

tcattcttgg tttgtgttta tgctcatagt tcacaaaggc caatggacct cccacttccc 2460

ttccctgtta atagagtctg gcttaaaaga cactcagtag ctatctccta ggggaaggcc 2520

tagctgcact ctctgttcac ttcattccca cttcctttta ccactgacct cccacagact 2580

tatttaactg cttcctttgg gagggactat tctttcctct cctacctgac ctcccctgct 2640

```
taacagattt tccatgatat gctttgtggt cctcagctgt tttactttca ggatgccttc    2700

tatatcctca gcttctctta acttttattt tgcacatcct tccagcactg attgcttgtg    2760

aactcatctc gtgcctgcaa gacatcaaaa gtttctccaa agacatccct tcctctctgc    2820

cctcatccta tatcaaggtc ttagctcctt gaagactgca ttaatgtgtc ttttgccttc    2880

atcccccccc cccaccctcc cgcttcctct agtccttgtg tttaccaaaa tacttttgct    2940

aaaacctgta tgtctagctt ctgctgatac tcttagcaat actcccttat ttccttctgg    3000

cgccatttgc caatcaccag ctaatggctt tgctctttgc atggtacctg tttctgtcct    3060

actagcttct agtctgaaaa ggaagccttt actagcagct tcaacccagt cctccttacc    3120

ttgcacctat taacgttggt tcaacatgaa ggggaagtaa gataagtgga agaggataca    3180

caggaaaggt ggaactggat tcaggtatct gtgttctgcc attgacactt gggactgcgt    3240

tccagcttcc acctgtggaa accagaaagc atttgccaaa aattctaaac agagggtcta    3300

tttctgaagc tgaggaatca catggagtga atagcatggg ggaaggggat tactaatgag    3360

gctgaaagaa aagtaccagg aagagactga cttcatgcat aatccataaa gccaggtttt    3420

cttgaaaggt gacctgcttt cttgtattcc tgcaagtaca cggcagggtg ggcagttcca    3480

ggcttatagt cattattccc taacaaacgg tcaagactta ggctgcccaa gactctacta    3540

cccttgtagt caaaaatcca accaccttga cctttacctc attatctgac cctttagcat    3600

ggagtcctaa aatggtcctg aatggacaaa tatctagaac tctggtaaat taacttgagt    3660

agcatgggaa ataagtatca cctcatagca ggactgaaaa acctccagtt aggaaagggg    3720

actcagaact gtactgtatt ctgtagaatc tttatccgta agtgctatgt atatactaat    3780

agttaaggtg aataataaaa caattgtgag ctaaggaatg tgatacagaa cacaaggagt    3840

caattaatgc atgagtctta agggaaattc ttagacttca gtgggtctaa gctcagaact    3900

ctgagcttag agaaacagga tgccccagta aacatgattt gtttgagaga aactaccata    3960

tgtaatagat gattcctcaa taaactgttt tcactaggtc                          4000
```

<210> 519

<211> 3938

<212> DNA

<213> Homo sapiens

<400> 519

gagctgctgc	cgccgccggg	cggacgggcg	gacgggcgga	cgcgcggagc	tgggggcggc	60
gcggcggggc	cggcggggcg	cggcggggct	gaccggcccc	gatgaggcgg	aaggagaagc	120
ggctcctgca	ggcggtggcg	ctggtgctgg	cggccctggt	cctcctgccc	aacgtggggc	180
tttgggcgct	gtaccgcgag	cggcagcccg	acggcacccc	tgggggatcg	ggggcggcgg	240
tggcgccggc	ggcgggacag	ggctcacaca	gtcgacaaaa	gaaaacgttt	ttcttgggag	300
atgggcagaa	gctgaaggac	tggcatgaca	aggaggccat	ccggagggac	gctcagcgcg	360
taggaaatgg	agaacaagga	agaccttacc	ccatgaccga	tgctgagaga	gtggatcagg	420
cataccgaga	aaatggattt	aacatctacg	tcagtgataa	aatctccttg	aatcgctctc	480
tcccagatat	ccggcaccca	aactgcaaca	gcaagcgcta	cctggagaca	cttcccaaca	540
caagcatcat	catccccttc	cacaacgagg	gctggtcctc	cctcctccgc	accgtccaca	600
gtgtgctcaa	tcgctcgcct	ccagagctgg	tcgccgagat	tgtactggtc	gacgacttca	660
gtgatcgaga	gcacctgaag	aagcctcttg	aagactacat	ggcccttttc	cccagtgtga	720
ggattcttcg	aaccaagaaa	cgggaagggc	tgataaggac	ccgaatgctg	ggggcctcag	780
tggcaactgg	ggatgtcatc	acattcttgg	attcacactg	tgaagccaat	gtcaactggc	840
ttccccccctt	gcttgaccgc	attgctcgga	accgcaagac	cattgtgtgc	ccgatgattg	900
atgtaattga	ccatgacgac	tttcggtacg	agacacaggc	aggggatgcc	atgcggggag	960
cctttgactg	ggagatgtac	tacaagcgga	tcccgatccc	tccagaactg	cagaaagctg	1020
accccagcga	cccatttgag	tctcccgtga	tggccggtgg	actgttcgcc	gtggatcgga	1080
agtggttctg	ggaactcggc	gggtatgacc	caggcttgga	gatctgggga	ggggagcagt	1140
atgaaatctc	cttcaaggtg	tggatgtgtg	ggggccgcat	ggaggacatc	ccctgctcca	1200
gggtgggcca	tatctacagg	aagtatgtgc	cctacaaggt	cccggccgga	gtcagcctgg	1260
cccggaacct	taagcgggtg	gccgaagtgt	ggatggatga	gtacgcagag	tacatttacc	1320
agcgccggcc	tgaataccgc	cacctctccg	ctggggatgt	cgcagtccag	aaaaagctcc	1380
gcagctccct	taactgcaag	agtttcaagt	ggtttatgac	gaagatagcc	tgggacctgc	1440
ccaaattcta	cccacccgtg	gagcccccgg	ctgcagcttg	gggggagatc	cgaaatgtgg	1500
gcacagggct	gtgtgcagac	acaaagcatg	gggccttggg	ctcccccacta	aggctagagg	1560
gctgcgtccg	aggccgtggg	gaggctgcct	ggaacaacat	gcaggtattc	accttcacct	1620

●

```
ggagagagga catccggcct ggagaccccc agcacaccaa gaagttctgc tttgatgcca 1680

tttcccacac cagccctgtc acgctgtacg actgccacag catgaagggc aaccagctgt 1740

ggaaataccg caaagacaag accctgtacc accctgtcag tggcagctgc atggactgca 1800

gtgaaagtga ccataggatc ttcatgaaca cctgcaaccc atcctctctc acccagcagt 1860

ggctgtttga acacaccaac tcaacagtct tggaaaaatt caataggaac tgagccctca 1920

tgtccccttg gcaggccccc cagggtctgg cactcactgc agacttcctc tttcaaggga 1980

ggcagggccc ctgtgggcac taggtgtaaa aggtgctggc caaatggttc agggtgaaga 2040

gggctcttga ttcaggggct ggggtctgcc tggtccttga cccctgagt tgtgggggta 2100

gggtgaagag catatcccac aagaggcccc acagggagca gagactgctt taatccctgc 2160
```

●

```
tgacatcacg gaaaagcaac agagcctttt caactttgtc actatgtccc cttgaacatt 2220

atgtgggaga acaccaaggt agcctaggcc acccaaaagt gagtcctgcg aggttgccca 2280

gccctcagat ggctctccta catgatggtg ctttagaaac aaaggtaaaa tttgcctgtt 2340

tggggcagct tttagtatcg atgccactca tctgcagcag aagagaaaga agtcctcttg 2400

gggcttttta gtttctgccg tcctggggga aacattgcag ttactgcaca gcttctgttc 2460

tctgtcacaa ccccaggtga tttggtccgg tcaaaggcca tacttggggc cctaagagtg 2520

ttcagtattg aatgctgatc agctgccagg tgaggagtca gaagagggag ccccctaga 2580

catttctttg cagctatgga catgcgggat atctcccct gctctctggg tatttgaaat 2640

gtcaatttta gcactctcca ggcacaagga cagcccagca ccagctttac agggcagtgt 2700

ttcagatggc cctgagccca cggaaaaggc caggtagacc tccaaactag aaatgctggc 2760
```

●

```
tgatttgccc tgatccatgc ttccatttcc ctgtctctct tccccaggca attactggcc 2820

tcaaaagagg aacagaggtg ctgcgaggtg ctcacctcac agagtctgga ggcctccagg 2880

atcaactgtg ggcaaagtgc ctgcctctga cctcatcatg gttctagttc tcatacagaa 2940

ctccagaatt tttaaagaac tctataattg gattgcaaac taggatgcta cataggattc 3000

tggtattcca catccaatat ggatttctag aatgctgtga ttaaaggagc cagccaggtg 3060

taatacagtc aaggcagccc ccagcctaga dacaatctgt gaaatccaaa gttggtggtg 3120

ttgggaaagc aggggggacat gtgtccctca gctcagcaga ggctgtggta caacatggtc 3180

cttggtgaag acctgcaccc ctggaacctc ccaccatcat cacaactgta gtctcatttg 3240

cagtggagaa aagaacccga tgtcccacag ccagatatac acccagctcc atgccagccc 3300

ttcatgttta cctttttgctt tgttaattac atgtcagact cctagagggc ctccagacta 3360
```

ataggaagca tttctgtaac caacctgcca cccactgatt cagaaatgga aatcacattc   3420

cacaatctat ggcttccacc agctagccca ggaaatactt gaaatcagca ttccaattag   3480

tgttgagtct cttgattgtg tcatttacca attaaataac tgagacctaa gtctgggaac   3540

agagccacga atctgccttt gagatgctgg cagatctcaa ggccatcaat tattggggga   3600

gggagggaca aacactccca atcatccacc agtcagactg aatgtgtagc tggcgaggaa   3660

ttacttccac ttctggccca gcacaagccc tgctttggcc acctgtctgc aagagaggcg   3720

gcccctgtgc ttgcaacgct tacgtgttca tcccagtgtc cttttccaaa tgagtgctgt   3780

agctttagaa gtggccctct atagaaagaa gtcaaaagat gaggcccctt ctagaatcta   3840

ggataacaag agtgttgaca gtttgaggag tcgaattgag attcatcatc aaagagcaat   3900

gcagcgtcgt taaaataaaa actgtgcctt ttaaaaag   3938

<210> 520

<211> 4384

<212> DNA

<213> Homo sapiens

<400> 520

aagtgaccgc gcggtgcgcc ggcccgcgag gaaacgcgct cttagaccat ggcgacccag   60

gcgaagcgtc cacgggtggc ggggcccgtg gacggcggcg acctggatcc tgtggcctgc   120

ttcctgagct ggtgccggcg ggtggggctg gagctgagtc ccaaggtgag cgagcgtgcc   180

gcgggccgcg ctcctgtcgc agcacacctg ctccatcggc ggcctgctgg agcgagagcg   240

agttgcgctg cagagccagt cgggctgggt gccactgctg ctggcgctgc tccacgagct   300

gcaggccccg gcctcacgct ggaggcccta ctttgcgctc tggcccgagc tgggccgctt   360

ggagcacccg atgttctggt gagagccttg ggaggggttg gggagcgcct gcaccgtagc   420

ctgctgcaag aacagtttcc ccgcccctgc accagtccta cccagtaaag tgtgtgaagg   480

aataaaggga acctgggtgt gggtgtccct gcaggccaga ggaggagcgc cggtgcctgc   540

tccagggcac aggcgtacct gaggccgtgg agaaggattt ggccaacatc cgcagcgagt   600

accagtccat cgtgctgccc ttcatggaag cccaccccga tctcttcagc ctcagggttc   660

gctccctaga actctaccac cagctggtgg cccttgtgat ggcctatagg tcagtgggtg　720

gggcctctga ggacggaacc cttttcttta caactctata gagggacaaa agtggaaaaa　780

cagtgaaatc cacccccagt ccctcaccca agacagggcc ttagccaggt tctgtcaatg　840

gcagctttca ggaaccactg gaggaagaag aggatgaaaa ggagcccaac tcccccgtga　900

tggtgcctgc tgcagacata ctaaaccact tagccaatca caacgccaat ctagaatact　960

ctgcggtgag tggagtttct cttggtgcac tgattgagca tgattcaagc cattgtgtct　1020

taggctccat tctcttacta gtgctacaaa atgagtaggt gaaatcagct cctcctgtat　1080

gtccttttag tatgcatatt actgtagaat catttgaatg cgaaacattt taaagtcctc　1140

aaagtaagtt gtggttaatc ctctgataaa ctatactacc atcatttatt tagtgctaga　1200

cattgagtgg tctgcatagc catgtttcat tcctttctgg ctgatcacat cagtgagccc　1260

agactgtgtg tggctctgtg gatagcagcc tggaacagtg atagtctccg tgttttggag　1320

ggatgaggac attcacaggc caaaggtcta agacgatcct agaactgata taaagctgtg　1380

tttataccag ctctattcta tataaaaagt agcctgaaaa gatggcacat ttataggatc　1440

agaaattagt aagtatggtt atttcttaat ccttgcctcc attttccttt cccactttga　1500

tctgcgaaag ttccattttt tccccccga ggcggagtct cactgtgtcg cccaggctgg　1560

agtgcagtgg cgtgatctcg gctcactgca actgccgcct cctgggttca agcaattctc　1620

cctgcctcag cctcccgagt agttggaatt acaggctcct gccaccatgc ccggctaatt　1680

tttgtatttt ttagtaggga tggggtttct ccgtgttggc caggctggtc ttgaactcct　1740

gatctcaggt catctgccca ctttgacctc cctaagtgct gggattacag gtgtgagcca　1800

ctgcgcctgg ccgaaaattt cgtttttaaa gctagcaact ttttaagtgc tgaagaggac　1860

tgtgcagaaa tccacccagt taaacatgaa gctggccctt taaagttagc ccaacccttt　1920

tttgtttcac agtttagggt ctaacaggaa ctaaaggtag aactttggta gttaacagca　1980

tcagtcatgg ctgaactaca cctgctgaag gctcttctta agtggaaata atcttcatgg　2040

ggctggcccg tgaaaggcat ggccccagct tctcccttc acctcagaat tgtcttcgga　2100

tggtagccac tcagcccatt cctaaaggcc atgagatttt caacacttat gggcaaatgg　2160

ctaactggca actgattcat atgtacggtt ttgttgaacc atatcctgac aacacagatg　2220

acacagctga cattcagatg gtgacagttc gtgaggcagc attacagggt gagtgtatca　2280

ttaactcaat atttgacact gatggtgtgt ctatacccat gcctcaggtt aaatagcttt　2340

gctaaatagc agttgacttt atagactggg tggcagacta aagaagaaat gaacccttgg　2400

```
gtgtactgag actttcacat tgctgtttca tctacaggaa caaaaactga agctgaaagg   2460

cacctagtgt acgagcgctg ggatttccta tgcaaactgg agatggtagg ggaagaggga   2520

gcctttgtga tagggaggga ggaggtgctg actgaagagg agctgaccac cacactaaag   2580

gtactgtgca tgcctgctga ggagttcaga gagcttaaag accaggatgg aggggggagat   2640

gataaaaggg aagagggcag cctgacgatc acaaatattc ccaagctcaa agcatcgtgg   2700

agacagctgc ttcaaaatag tgttctactg actttgcaga cctatgccac agacttaaaa   2760

actgaccaag gtttactcag taataaggga gtctatgcga aactcagctg agggaacag   2820

caagccttac aggttcgcta tggtcagaag atgatcttac atcagttgtt ggaactgaca   2880

agttagcagt ttccctgttc cctgaaggaa cagcaataag aactttattc taagctaata   2940

ctcattgatg tttgaaaaag aggaaaattt ggatctttct tttgcttact aaacaccaag   3000

aggaaaagta gcaaagttgg tgtgctagga ttaactcagg taagggtgat gtgttttagg   3060

attgagaaca gcagacttgg gaatcactgc taattgttac ttaaagcatg ttacagctgt   3120

tttgttctca gttttaacca aagccagtgg acatacggta gtaataagta agtcttgttg   3180

tgtttcagca tttaataata gactttggag gtagacccct ggtttaaatc taagtctagt   3240

ttgaggaagt cacttaacct ttattgaaaa gactctggat ttaataagct gtgtaactgg   3300

tactcgatag ttacccaaag ttcagtctag atggcacaaa ccacctctca gggaataaac   3360

cctaagacat cactcaagga ggacttcaat tatttaattt tgaactgttt tgtcctctct   3420

ggccataaaa cttgacagtc atgaaaggta aggcaaattt taagtgggtt aagtttttaa   3480

atacgtatct actcattttc tttaaaaaaa aaaaaaaaat acctgggggga aaaggatatt   3540

aaaactgggt attttaaact cagcttaacc agataaacct gctccagcat ttgtccagtg   3600

ttgaaataaa taggaagaaa aatacaattt ccttaaacat gccagcttag tagtaggaat   3660

gacctatcaa tcaatcaatc aatcattcag caagaagtta gttgttggtt ccccatggcc   3720

ccaaggtcta cagggctgga ttgtccactt ttcctcctca ccaccagcac tgcctgctgc   3780

tactgagaaa ggcacagtgg actcatgtgt gtgtcatgac tttaatggtt agctacagta   3840

tgcatacaca tacaagaagt aggggagctg aagcccagga aaaggttaca aaatacaaca   3900

cagggaccaa tacatttgca aaacattcaa aatccttata aaaggggctg tattggtcct   3960

ttcaactttg tcattattca gcttagcctg tatggccatt cattcagtgg ggtaatgggg   4020

gagaacaatt aattaatgag atttggttcc ctttcctata ttcccactgt ttttaagttt   4080

caggagagga ttgtggggggt gagggtaggg ggtgggcttt aggcctggtc tggtttccct   4140
```

ttatataaag agctgacccc catctcaggc ggctgaggtg tataatcccc aaaagaaata 4200

agatggtaca aatgcagtca gctttggaat acgtttgggt agagacaaaa tgaaaactca 4260

tgggattcca atagtgagcc cttcccatgt tcctggacat atccaattct agcacatcca 4320

catttttaat aacttagtga ttttcaaggt cccctgtcca cattaaaaaa ataagttaca 4380

taat 4384

<210> 521

<211> 3791

<212> DNA

<213> Homo sapiens

<400> 521

aaaacaaact ttaaaacaac agcagttaaa agagacaaag agggacatta cataatggta 60

aaaggccatg tccaacagga aaatattact gtcctaaaca tatatgcatc taacactgga 120

gcttccaaat ttataaaaca attactaata gacctaagaa atgagagaca gcaacacaac 180

aagagtgggg gacttcagta ctccactgac agcattagac aggtcatcaa gacagaaagt 240

caacaaagaa acaagggatt taaactataa cttggaacaa atggacttaa ccgatatata 300

cagaacattt catgcaacaa ccacagaata cacgttctat tcaacagtgc atggaacttt 360

ctccaaggta gaccttagga taggccataa aatgagcctc aataaattta agaaaatcaa 420

aattatatca agcactctct ctgaccacag tggaataaaa ctggaaatca actccaaaag 480

gaaccatcaa aaccatgcaa atacatggaa attaaataac ttgctcctga atgagtattg 540

ggtcaagaac gaaatcaaga tggaaattaa aaaattcttt gaactgaatg ataataatga 600

cacaacctac caaacccctg ggataaagca aaggtggtgc taggaggaag gttcatagcc 660

ctaaatgctg atatcaaaaa gactaaaaga gcacaaactg acattctaag gtcacacctc 720

aaggaactag agaaacaaga acaaaccaaa cccaaaccca gtagaagaaa gaagtaacca 780

agatcagagc agaactaaag gaaattgaaa cagcaataac aacaacaaaa atacaaaaga 840

taaacaaaaa gctggttctt tgataagata agtaaaattg atggactatt agcaagatta 900

actgagaaaa taagaaagaa aatccaaata atttcactaa taaacaaaac aggagatatt 960

```
acaactgaca ccactgaaat acaaaggatc attcaaagct actgtgaaca cctttatgca  1020

cataaactgg aaaacctaga agagatggat aaattcttgg aaaaacacaa tcctcctagc  1080

ttaaaccagg aagaattaga taccctgaac agactaataa caagcagcga gattgaaatg  1140

gtaattaaaa aattaccaac aaaaaaagtc ccggaccaga tggattcaca gcagaattct  1200

accagacatt caaagaagaa ttgataccaa tcgttttgac actattccac acgatagaga  1260

aagaagaaac ccttcctaat tcattctatg aagccagcat caccctaata ccaaaatcag  1320

ggcaggacat aaccataaaa gaaaactaca gaccaatatc cttgaagaac atagatgcta  1380

aaatcattaa caaaatacta gctaactgaa ttcaacaaca tatcaaaaag ataatccacc  1440

atgattaagt gggcttcata ccaaggatgc agggatggtt aacatacac agttcaataa  1500

atgtgataca ccacacaaac aattaaaaac aaaaatcatg tgatcatctc aatagatgca  1560

gaaaaagcat tcaacaaaat ccagcattgc tttatgatta aaactctcag caaaatgggc  1620

agacaaggga caggtatgtc ccttgtaata aaagccatct atgatagacc cacagccaac  1680

ataatactga gtggggaaaa gttgaaagca ttccctctga gaactggaac aagacaagga  1740

tgcccactct caccactcct cttcaacata gtactggaag tccaagccag agcaatcaga  1800

caagagaaag aaataaaggg catccaaatt ggtaaaggga aagtcaaact gtcactgttt  1860

gctggtgata tgattgttta ccttgaaaac tccaaagact cctccagaaa gctcttagaa  1920

cagataaaag aattcagcaa agtttctgga tacaagatta atgtacacaa atcagtagct  1980

cttctatata ccaacagcaa ccaagcagag gatgaagtaa agaactcagc ccctttaca  2040

atagttggaa aaaaaaaaa aaaggaatat atctaaccaa ggagtcaaaa tagctctaca  2100

gggaaactac aaaacactgc tgaaagaaat catagatgat acaaacaaat ggaaacatcc  2160

catgctcacg aatgggtaga atcaatattg tgaacatgac cgtactgcca aaagcaatct  2220

acaaattcaa tgcaatcccc atcaaaatac caccatcatt cttcacagaa ttagaaaaag  2280

caattctaaa attcatatgg aaccaaaaaa gagcctgcat agccaaagca agactaagca  2340

aaaagaacaa atctggaggc atcacactac ctgatttcaa actatattat aaggccatag  2400

tcaccaaaac agcatggtac tggtactggt ataaataggc acatagacca atagaataga  2460

atagagaacc tagaaataaa cccaaatact tacagccaac tgatctttga caaagcaaac  2520

aacattaagt ggggaaagga caccttttc aacaaatggt gctggcagaa ttggatagcc  2580

acatgtagga gaatgaagct ggatcctcat ctctcacctt ataccaaaat caactcaaga  2640

tggatgaagg acttaaacct aagacctgaa actattaaaa ttctagaaga taacattgga  2700
```

aaaattctag acattggctt aggcaaggat ttcacgacca agaacccaaa aacaaatacg 2760

acaaaaacaa agataaatag ctgggaccta attaaactaa agagcttttg catggcaaaa 2820

ggaacagtca gcagactaaa cacaacctac agagtgggag aaaatattca cagtctatac 2880

atctgacaaa ggactaatat ccagaatcta caatgaacac aaatcagtaa gaagaaaaca 2940

atcccatcaa aaagtgggct aaggacatga atagaaaatt ctcaaaagaa gatatacaaa 3000

ttgccaacaa acatatgaaa aaacgctcaa catcattaat gatcagggaa atgcaaatca 3060

aaaccacaat gcagtaccac catactcctg caagaatggc cataataaaa aagtcaaata 3120

acagtagatg ttggcgtgga tgcggtgatc agggaacact tctacactgc tggtgggaat 3180

gtaaagtaaa gtatacagcc actatggaaa acagtgtgga tatttcttaa agaactaaaa 3240

gtagaacttc catttgatcc agcaatccca ctactgggta tctacccaga ggaaaagaag 3300

tcattattca aaaaagacac ttgcacacat atgtttatag gagcacaatt cacaattgca 3360

aaattgtgga accaagccaa atgcccatca atcaacgagt ggataaagaa actgttatat 3420

atatatatga tggaatacta ctcagccata aaaaggaatg aattaacagc atgtgcagtg 3480

acctggatga gactggagac tattattcta agtgaagtaa ctcaggaatg gaaacccaaa 3540

catcatatgt tctcactgat atgtgggagc taagctatga ggacacaaag gcataagaat 3600

aattcaatgg acttcgggga cttgtgggga agaagaggag gagggccgag gaataaaaga 3660

ctaaaaatat ggtgcagtgt atactgttcg ggagatgggt gtgccaaaat ctcacaaatc 3720

accactaaag aacttactca tgtaaccaaa taccacctgt accccaataa ttatggaaaa 3780

aaaaattaag c 3791

<210> 522

<211> 1748

<212> DNA

<213> Homo sapiens

<400> 522

agcctccgcc cgcaccgagc cgcgggaccc gggccgtacc ggggaggggc cgctccgggc 60

cgcagcgcga gggcagcgag gggcggcggg gacctggcac cgggcggggc cggcggcagc 120

gaccatgatc gctttgttca acaagctgct ggactggttc aaggccctat tctggaagga　180

ggagatggag ctcacgctgg tcgggcttca gtactcgggc aagaccacct tcgtcaacgt　240

gatcgcgtca ggacagttca acgaggacat gatccccacc gtgggtttca acatgcgcaa　300

gatcaccaaa gggaatgtga ctatcaagct ctgggacatt gggggacagc cgcgtttccg　360

cagcatgtgg gagcgctact gccgaggagt gagcgccatc gtgtacatgg tggatgctgc　420

tgaccaggag aagattgagg cctctaagaa cgagctccac aacctactgg acaaacctca　480

gctgcagggc atcccggtct tagtcctggg taacaagcga gaccttccgg gagcattgga　540

tgagaaggag ctgattgaga aaatgaatct gtctgccatc caggaccgag agatctgctg　600

ctactccatc tcttgcaaag aaaaggacaa cattgacatc accctacagt ggcttattca　660

acactcgaag tcacggagaa gctgagactc cagcccttct ccctcagacc agggaccgtc　720

atcatctaaa cctgaagccg agctccccgc ccacccctgt cgtcccccta agcccacccc　780

tcctcaccca gtgtgaggag ggccctctgg gaccccaga gtcctgttct gctgaggttt　840

gaactcctgt ttttattgta aaataaattg ccccccattc tggtccccta acttctcacc　900

cttccccgct gcctttgtcc catcacccag ccctgcctcc ctcccagcag ccctgggcca　960

cagcccccgc ccctggcttt tccccggccc gctcttgtac ctcccttttc aacactctct　1020

gttattgtcc tgtgtgtaca gtatatatat gtatatatat tttaattttt taatttaagc　1080

aaagactaaa atcaaccatt tgatgctgca ggggcctttc aggatctggg aggggggcagt　1140

ctggagagaa ggagggagac gcaggtggac ttggggcaag ttcagatcag aagaggtgca　1200

ggctggcacc tgcggcaggt gccagcctgg gcactggtgg ccgcctccct gtcccgtgtg　1260

tttccaccgc ccaatctggc ttgtcctggc agtgcttgaa tgccacaggc tggcaggggc　1320

ctctgggggc ccctcccctc gacccccagc ctgggtagag ccaccaggta cgacgaccag　1380

gtaccagaaa ccaccaggca cacggggcag aaagccagcg tccatgcccc agcagccccc　1440

tcctgcctgt tcctggctcc cagctcccgc ccctccccag ggcccccacc tccacggccc　1500

acttcatttt ctgttctcat tttgcagagt tgcacaagga gagaactcag catggggggt　1560

tggttctttg ggttctgttt gtttatttgt ttaatttaat gatttgtaaa gtgatgttcc　1620

tcttcctttt ttacactttt cagctcatat ttaacctctg tttggaaaat gattcttgta　1680

actgtacatt tttttgcttc ctaataacaa tgacaacaaa aaaaataaat gaccagtttt　1740

gtgttgggg　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　1748

<210> 523

<211> 1958

<212> DNA

<213> Homo sapiens

<400> 523

```
ataaaaaggg cttaataatc acttgtttat tttccctttt ctttccagca gaaagtcacc    60

tcgtcatcaa tgtgactcaa actaatcatc ccttaaccct cgagtttgat gcttgttcag   120

ttatctcatg tggagatgaa caagctcaaa ggcagctatc aaatgtagat aagtatttat   180

gtccataccg tattgagtca accaagtata agtatggagc cttaaaaagt ccctgtggtg   240

actggacaga tgtttggcag accacccaac atggacggtg acagccagg ccccctttt    300

caaagaagtt gcaaggacta aaacagaaac tccaacttat tcatggtccc actccaccaa   360

attgtaagtc attgcagtgt aaccccttat tgctaattat agataatctc caaacaatgg   420

cccaagaacc ctccatattt gaacggtatt ggttaggagc aaatgttaca ggacgagacc   480

ccataggaat cttctctctg aggttagcta gagcatcagc taagaacaat aaagaaatcc   540

agacccagag tctggagaac atgtgggacc caacactgtg cccaaacata tcaggctcag   600

cgctctcctc ccatctctag aaccacccaa ctaaggtaat ggttgtagag gtaaaagatt   660

taaggcagac catagctcta gagatggggt acaaagatgc aaatgcctgg ctggaaagga   720

ttaaatattc catctgcagt ctaaacaaaa acgattgtta cacttgcgtg cactgcaggc   780

cagaggccta aatcatcccg tttccactcg tatggtcctc cagccgacca ggcacaaatt   840

gtaaggtagc tctctcccaa caccccacag cctggggtca tgaatcatgc ggagctctct   900

ctctgctatt ccccaaagtc cggcaccctg tgggtcagtc cccgaggtcc atccagcttc   960

catctcctga tgccagtttt accttgtgtc tctcatgaca gagagaaaac ttagcatttc  1020

tgggagacct aaagggatgc agtgagctta agtcattcca agagctaacc aatcagtctg  1080

ccctgatcca ttgccaagtg gatgtatggt agtattgtga cggaccattg ctgaacactt  1140

tgccaagtag ctggagcaga gcagcacttg cactctgatc caactggcca tccctttcac  1200

cctggcattt cattaaccaa aaaggataaa aacaaagcat cataaaacaa gagatgtccc  1260

tcatgggtcc tttgaccctc atgtttatat agatgccatt ggagtcccga gaggagtccc  1320
```

```
agatgaattt aagtcccaaa atcaaataat tgctgggttt gagtccctac tattctggtg   1380

gttaactata aataaaaatg taaattggat aaattacatc tattacaacc agcaacaatt   1440

tgttaactat actaaagatg ctattaaatg aacagctaaa cagttaggac ccaccagcca   1500

aatggcttgg gaaaatagaa taacattaga tatgatacta gcagataagg gtgaggtctg   1560

tgtcatgatt ggaactcaat attctacttt tatacctaat aatactgctt ccagtggaac   1620

cataacaaaa gcattacaat gtcttcctgt tttatccaat gaactagcta agaattcagg   1680

aataaatgat cccttcacta atttaatgga aaaatgtttc agcagatggg aaggacttat   1740

gtcctcaatc cttacttctt ttgctgttat aataggtgtg cttattcttg taggatatta   1800

tattgtattc tgtgcccaag gcctagtaca aaggcttata gaaacagctc tcacaaaaac   1860

ctcccctaca tctccttctc catattctta ttcctaggtg atcaagaaga acagcaaagc   1920

caaattatat tagaaaaatt tgaagaggag gaattatt                          1958
```

<210> 524

<211> 2330

<212> DNA

<213> Homo sapiens

<400> 524

```
ctccaagagc agggttggta gagctgaggg atgagagatt tgcctgtcct ggagagtcac    60

caccccttcca gctttggga ggcccccagg gaaagtgagg gagaagatat atgaagattg   120

ctgaattacg tgcctccttc ggagaacccc acccagtccc gggcccaggg cagtaacttg   180

cccattggaa aggggaaagc agaggccaca ctcagtgaca atggccacaa ggaacattgg   240

ctagcatgtg gatgacctct gtttccttac aggctctgaa gcccttccat gaatccccgg   300

aagaaggtgg acctgaaact cattatcgtc ggagccattg gtgtgggaaa gacctccctc   360

cctcaccaat atgtgcacaa gacgttttat gaggaatacc agaccacact gggggccagc   420

atcctctcca agattatcat attgggtgac acaactttga agttacagat ctgggacacg   480

ggcggtcagg agcggttccg ctccatggtg tccacgttct acaagggctc cgatggctgc   540

atcctagctt ttgatgtcac cgacctggag tcttttgaag ccctggatat ctggcggggt   600
```

●

```
gatgtcctgg ccaagattgt ccccatggag cagtcctacc ccatggtgtt gttggggaac    660

aagatcgatc tggcagaccg gaaggtaccc caggaagtag ctcaaggctg gtgtagagag    720

aaagatattc cttactttga agtcagtgcc aagaatgaca tcaatgtggt gcaagcgttt    780

gagatgctgg ccagtagggc tctgtcgagg taccagagca tcttagaaaa tcacctcaca    840

gaatccatca agctctcgcc agaccagtca aggagcagat gctgctgacc tccagacgcc    900

tgctctggaa gcccagaaac agagcctgcc ccgagcctgg tcaccccagg cttgagaaca    960

ggtgaccatc cccctccagc cccactgcct gcccaagcac agtgcagggg gcctaagctc   1020

tgcggcagag cccttgaccc tggtgctggg cccagagtca gagggcagcc cctggctcag   1080

gctgagtata gtgagagcgt ctggatgaag cccggaatgt cagagccaaa ccctggtcct   1140

gcagaagtca cagtttccgc agtggctcca gctttcccca cccatccacc cctcaaacac   1200

tcccgctcca gaacacacat ctccgcagac cggccactga ttggagtctg gttacatcct   1260

cctgtggaca gaccttcctc acccgctccc acctcacacc cctcagccac aagcaaagct   1320

ttggacaatg gcacagctca gcctccttca acgagcagac taaggagtaa aggtctggac   1380

cccacatgct gggcccgcct cagctcctgg cagaagctgt cgtgcctgag accccctctg   1440

ctccctccag ggtagaagac tgagggagca caggagaagc cacaagggac catggctcat   1500

tcctccttgc tgggtgctca ggcaactcac ataaatctct gagtctcaat ttgtttatct   1560

gtcctgtggg ggtgagatgt gccttgcccc ctgtatcaca gtgtggtttt gaggaccaga   1620

agctgtgctt aaatccagta gctgttgtca atatgcattt atttacttct ttgacaagtt   1680

tatttttgcg tatctactat gtacgatgca ttgaagtcca gtgacaaaca aaacacaggg   1740

actctgccct cctggagccg acatctggtg agggagagac gcagactcta gacagatatt   1800

tccaaatagc aggcagcaca gacagggcct agcctggaga gggtggacaa gatgtcctct   1860

cagggtcttc aatggccaag tccaagccca ctgcagaatc tttctgtcta cccgtaagta   1920

tcctttcctg agttccaggc aaagctgggg atgttagcct atgactgtca tctgacttgg   1980

aaggtacacc taggggccgg ggggaggtca gcaggggagt ttgggagcca cttctccccc   2040

cacgtggcac tggagtgtga actggctcat tctggacacc agcatggagc cagcacggga   2100

acaggggggc agcctagagc acaagctcta tctgtgtcct tcagagctcc tgggaaacat   2160

gatgcgccct catgggaatg gcattttgca tatcacacag gctgtcctgg gagtcaggca   2220

gactggattg tcacgtgcgg tgtgcatgca gcagcttgtg cactgcagtg gacctgtgga   2280

ccatttctaa aggtgcacaa caaataataa atgtgtcctt ctttgttttt               2330
```

<210> 525

<211> 2205

<212> DNA

<213> Homo sapiens

<400> 525

```
ggatgggaga tgacattcct gattctgagt attgctccag tacttgccgt gacaggaatg    60

attgaaaccg cagcaatgac tggatttgcc aacaaagata agcaagaact taagcatgct   120

ggaaagatag caactgaagc tttggagaat atacgtacta tagtgtcatt aacaagggaa   180

aaagccttcg agcaaatgta tgaagagatg cttcagactc aacacagaaa tacctcgaag   240

aaagcacaga ttattggaag ctgttatgca ttcagccatg cctttatata ttttgcctat   300

gcggcagggt ttcgatttgg agcctattta attcaagctg gacgaatgac cccagagggc   360

atgttcatag tttttactgc aattgcatat ggagctatgg ccatcggaaa aacgctcgtt   420

ttggctcctg aatattccaa agccaaatcg ggggctgcgc atctgtttgc cttgttggaa   480

aagaaaccaa atatagacag ccgcagtcaa gaagggaaaa agccagacac atgtgaaggg   540

aatttagagt ttcgagaagt ctctttcttc tatccatgtc gcccagatgt tttcatcctc   600

cgtggcttat ccctcagtat tgagcgagga aagacagtag catttgtggg gagcagcggc   660

tgtgggaaaa gcacttctgt tcaacttctg cagagacttt atgaccccgt gcaaggacaa   720

gtgctgtttg atggtgtgga tgcaaaagaa ttgaatgtac agtggctccg ttcccaaata   780

gcaatcgttc ctcaagagcc tgtgctcttc aactgcagca ttgctgagaa catcgcctat   840

ggtgacaaca gccgtgtggt gccattagat gagatcaaag aagccgcaaa tgcagcaaat   900

atccattctt ttattgaagg tctccctgag agcctagagt gttgattgta gcaccaaggt   960

cttctgtcca caatttattc agcaagatag ctgatgcagt catggctcac agagtgcact  1020

ggatcaatgt gaggaccaaa ccaaaatttt ggcagcagct gcatggtctc attaaattaa  1080

ccaggcacac ccagaaaata ttctgtatcc acatccctaa aacaagattg aactcagctc  1140

aagcaacttc gggtccggac tctcctcagg aatcaaacca aaaagcacta tttcactaaa  1200

agaagtgaag atagttggcc agactaaatc caggtatttg gacataaatc tcaggtggct  1260
```

```
catctgcctt ttcccaggaa aatgcggccc cagctttcat cagtgtgtgc tttgtcttga    1320

tagaaatgca taatcatcaa agctaagtat tttttttacc tcaaatataa gatcctttag    1380

cactgatttt aaaagtattc gtaaaccact tataaactac gaatgaaaaa ataaaggacg    1440

acacagattt gtaggggcaa gaaaggtgag tagggaagga ctagatcatc tgcatcgaga    1500

tttgaaagac acttgtggct tacttgcaaa gcttctttta gcattgagcg tacgagggaa    1560

attctgttct tgatgacagc gcagtgggaa ttcccactcc aacaacccat gaaatgttac    1620

tgcataatta ttccccttct gaggcccatt acgacttatc agcagagaaa gaaatttaat    1680

ttaaactcac ccctctgtgc taaagaatga ctgggacatg agatcaaagc gcgaagctct    1740

gtcctccagt ggtttgcaac acctaggcac aatagggtga gagaacgcgg cattccagcg    1800

cttcccagct ttccggaccc cggagagagg gggtgggggt gtgggctcac atcgccggct    1860

ggcttgaggg aggagagtgg tggcggctcc ggaggtggac gtgtcaatta tatcctggag    1920

ctccgggaag ccagattgct tctaccggcg gctgcagggg ctttgcaagc gaagataggc    1980

ggccctcctt ccttccccac tgtgggggat tggggtcagt ggagcccgtg gatttagcca    2040

cgaggggaca tgactggagc cctgtcacgc gcaggtgtgc gtctccgaga gctctttcaa    2100

tataagtgcg ggagaagatt tatgctgcag cctcatcaca ggatgcctta aatgcatgta    2160

catagtgcgt atctaaccac ccataaaagc caagtttaat ccttg                    2205
```

```
<210> 526

<211> 2432

<212> DNA

<213> Homo sapiens


<400> 526

attggattag cggcagcagc ctgccagcct gcccgaggag tgctgggacc agcgcgctgc     60

acgccgactg gcacgatggc ctcgtctcag gggaaaaacg agctgaaatt agccgactgg    120

atggcaactc tgccggagag catgcacagc atccccctca ccaatttagc cattccaggg    180

tctcatgatt ccttcagctt ctacattgat gaagcctctc cagtaggtcc tgagcagcca    240

gaaactgtcc agaattttgt ctctgtgttt ggaactgtgg ccaaaaagct catgcggaaa    300
```

tggttagcca ctcagacaat gaattttact ggccagctag gagctggaat tcgttatttt　360

gatcttcgaa tttccaccaa gcccagagac cccgacaatg aactctattt tgctcatggt　420

ttgttcagtg ccaaagtcaa tgaaggcctt gaggagatca atgcattcct cacagatcac　480

cataaggagg tagtgttctt ggacttcaac cacttttatg ggatgcagaa atatcaccat　540

gaaaaactgg tccaaatgct gaaagacatc tatggaaata aaatgtgccc agcgattttt　600

gcccaggaag ttagtttaaa gtacctgtgg gagaaggact atcaagtgct ggtcttctac　660

catagtccag tggctctgga agtgcccttt ctctggcctg ggcagatgat gccagcaccc　720

tgggccaaca ccacagaccc cgagaaactg atccagtttc ttcaagcatc catcactgag　780

agaagaaaga agggatcgtt ttttatatct caggtggtgc tgaccccccaa agctagcact　840

gtggtcaaag gggtggcaag tggcctcaga gaaacaatca cagaaagagc tcttcctgcc　900

atgatgcagt gggtccgcac gcagaagcca ggagagagtg catcaatat tgtcactgcc　960

gattttgtag aacttggtga ctttatcagc actgtcataa agctcaacta tgtctttgat　1020

gaaggagaag ccaacacttg gtagcactac ttggagtttc catgaataag atggagaaag　1080

ctcattgtat tagggcatac tatctgtaaa cactctgatc ttcctattcc actgagtctc　1140

tgaagggaat agggctggta gtgggtggga aaaggggaaa aactgtttct tcagtgatta　1200

caatcatact cttcattact ataaatattt catttcccat ttgatgagca aaatctactt　1260

ctagtgttag gaataaaaaa aaaagaccag taactttgtt tttcaaaatt agtctttgta　1320

acatagaatt catgagtgtt tacttgatta ggttctctat ttccagccta tgactcctac　1380

gctgtctata ccctgcaacc tttctgctcc ctctcttgct cgctcttttt aatcagatgc　1440

tgtatgggaa tcaaaacaat tgaatgccca acattctgtg tattacattg ttgtcttaaa　1500

acttactagt tttgtgggac ttgttataat gctctatagt catccacagt tgggcaatca　1560

tagctaattt ttggtcatag aaaatctgca tcaaatcagt ttccatgcat cagtaatatt　1620

gaaggtcata atcagtgatt tttgttatat gaaaataata gtgtttcaca gtatttctat　1680

ttaaggcagc tataaatata ggagaaaaat gtttttggag agctgtgaat gccaatttca　1740

gagggaaaaa tggttgaggg gtgaaagaga tgtatggcat tttaatttgg caatctctta　1800

aataatattg ccctgcaagt acccagtaaa tggtaaggta caagtgtgtt aaaattgaaa　1860

actctgaaaa taactcttta aaaagccctc ttaatgatgc tcttgatgaa agaaaaagac　1920

agaaggaagg aaggaaggaa ggaaggaagg aaggaaggaa ggaaggaagg aaggaaggaa　1980

ggaaaggaag agaggaagga agaagaaaaa gactgcaagc tttcctgcca atttgggatt　2040

●

```
ttcaaatatt taattctaaa ttccagattt taaggaagat ttttcaagaa actgcaagtt   2100

tttgacttga aggaaagaaa gaggaaggct ggtagaagca gttagagcaa tgtgtttgaa   2160

attatgtcca tgaaatcaca gggatctctg aaatatcttt aggaaacttg aaatttatga   2220

ggtctgaatg gacttgttta aaattggctc tgactcctca cttctgagtt tcatcctatc   2280

cgagggatga gattaaggca gaggcaaaag tttcacacaa agtttctgca acctaacgtt   2340

taatagtccg ggtctacagg gaagaacaat gacacagctt gagcgttact tcctccttcg   2400

tgtcattgtg atatttgaca actctaaaaa at                                 2432
```

●

<210> 527

<211> 1959

<212> DNA

<213> Homo sapiens

<400> 527

```
atggggggctc aggacgacct gaggaaggtc acccagagtg cctacgccca ggttgtgcag   60

tttggggtga gtgagaagct gggccaggtg tccttcgact tttcccgaca cggcaagacc   120

ctggtggaga agctgtacgg cgaggcaagc gcccagctcc ttgatgacga ggtccggcac   180

ctcgtcagtg ccacctacag gtgcgccctg gacctgctga cacggtgccg ggagcatgtg   240

gagaaggtgg gccagcggct cctggagaag gaagtactgg agaaggcaga catggtggag   300

ctgctgggcc cccggccctt ctcggcgaag tctacctatg aggagtttgt agagggcgtg   360

ggcagcctgg aggaggacac atcccttccc gaggggctga agggttggaa ccgcggacag   420

gaggaggaag atgtggagag cagcctgtgc aggggggctct gtgtagcccg tggcggtcgc   480

ctgcacctgc tgctgggtgg agttggggtg actgccactt acctggggcc ttggcaaagc   540

agctgcggaa tctcacccaa aacaaattaa aacgtgacaa ctgtgaatgg gtgtttttaga   600

tgagggtgct ctgagcccac atgcagggag taggagtggg agtgggcaga ggggggtaccc   660

tgagtccctg ggccctcccg ctggaggaca gtcgggtcca ggcttagacg ggagaggccc   720

cagggctctg gccctgtgg tgctgaggaa ggcacgactg tagcttcgag aggggcttgc   780

gtgggacacc ttggagacac caggccttcc tggggcctcc gtggaggagc gttgatatgg   840
```

tcataaagac actcggagga gcctgggtcc agcacagaaa ccctctccgt ttggtagaat　　900

tcagaagagg agaacgtcag ccaggcatca aggggaagtc agggttctaa agcagctgtt　　960

tggatcggta gaagccgatc tgctgttctg tccttagaaa ggaaaaagcc cacaccaccc　　1020

acaggtgcat ggctgaggga ggaggtggag ctgtggggcc tcacacctgg gttccccatc　　1080

agggcacccc ccgccacccc tgcctgcgcc ttggctctgt ggcagcactg ctgagtgtga　　1140

gggaattgag ttgcttagaa aacctggccc ctgtccttgg ctggaggtgc tttcactgcg　　1200

ggatgtgtct ggatcgtcag ttctgttcct gtgacccctt tttgttggag tcttggagcg　　1260

ggaagctctg cagggcccca gccggctcag gggtgtttgt ggagagactg tggtcctgaa　　1320

gccccagcac gtggctgccc ctggccctgg tacctgttcg tgaacacttt tcctggggtt　　1380

gggtagctcc taattttat taggaaggcc ccttctgggc tctgagcttc aggccctttg　　1440

gcgccttgta ctgagggagg gtttgctttt tcttgtctgg ggtgtgtggg actcgatgag　　1500

gatgccccgt gtgctttctg cagcacacga cctgcctcca ggactcgctg gggtcagcaa　　1560

cagcagggca gtgtcagcct caaccactgc cttggggtgg gtggatgcgt gtctaggtca　　1620

cctgggatga gacctgggga agacgcccat ttgcatatgt cctgggtgag cggccggagg　　1680

aggaggccct gcttgtgggt cagctgggat gggacctggg aagatgcccg tttgcagatg　　1740

tcctgggtga acagcgggag gaggaggccc tgcttgctgc cccgggcact gtttgttctc　　1800

agcctccctc tcgacctagg ccagatcaga cactggggct ttgtagtata ttttataaat　　1860

cgcttgttat gttggcctcg gagcctcaaa aatataattt ccaactgggg gtgaacactt　　1920

tcaactttg ctgtttataa aatgcatatc attggactc　　1959

<210> 528

<211> 1924

<212> DNA

<213> Homo sapiens

<400> 528

tcaaatagtt tgcccatttt ttattggagg tttgttttct tatgtagttg taagagttct　　60

ttatatattc tgagtacaag ttctttatga gatgtatcct ttgaaatgtt ctttcctggt　　120

```
tgatgacttg tcttttcatt atcttaacag tatattttga agagcagaag tttttaattt   180

ttctgaagtt gaatttcttt ctttctttct ttcttttttt tgagacagag tcttgcaatg   240

tcacccaggc cggagtgcaa tggcgtgatc tcgtctcact gcaacctcca cctcccggga   300

tcaagcgatt ctcctgcctc agcctcccaa gcagctggga ttacaggcgc ccgccaccat   360

gcccggctaa ttttttgtat tttagtagag acggggtttc actatgttgc ccaggctggt   420

ctcaaacacc tgccctcgtg atccgcccgc gtcggcctcc caaagtgctg ggattacagg   480

tgtgagtcac tgtgcccggc ctcttttct ttttgtttga gactgagtct cactctgtca   540

tccaggctgg agtgcagtgg gaccatcaca gatcactgca gcctcaagct ccccggctca   600

agcgagcctt ccacctcagt ctccagagta gctgagacta taggcatgtg ccatcatgtc   660

cagccagttt ttaaatttt tgtatagaca gggtctctct atgttgccag ggctggtctg   720

gaactcctgg gctcaagtga tcttcccgcc tcagcctccc aaagtgctgt gattagaggc   780

atgagtcact gtgcccagtt ttaattttct tttatggatt ttggtgctat acctaggaaa   840

tctttacctg acctagtatc acagacttta ttctatttat aagaaatgtt atagctttag   900

gttttatgtt tcggctatga tccattttga gttaatttct gcatatgata tgaggtatgg   960

atgggagttc attgttttcc atctggatat gcaattgttc cagcaccatt tattgaaaag  1020

actatccttg acccactgaa ttttcttcat acatttgtta aaaatcagtg tccataatat  1080

gtgggtgttt ttctcagact ctcttgtcat agtcagtttg ggctgctatg acagagcacc  1140

ataaactggg tggttcataa accacaaaaa tattttctc atagttctgg aagctggaag  1200

tccaagagaa ggtgccagca tggtagggtt ctcctgaggg ccctctccaa gttgtagatg  1260

gcttacttct tgctgtatct tcacatagca gagaacagag agggaaagca agctctctca  1320

tgactttata agtacactaa ttccattaat gaggtctcca tccatacgac ctcatctaaa  1380

cctaatcacc tctcaaaggt cccacctcct gataccatca tattgggcag tagggtttca  1440

acatatacat tttgaatagg acacaaacat tcagtccata ccactcaatt ctattgtttt  1500

gttctatttt tctatcttca caccaataat acacagtctt gaatactgta taagtcttta  1560

taagtcttta aatcaggtag tatttgcctt ccaaatttgt tctttttttt ccaaaattgt  1620

tttggttatt gcagtacttt acatttccac ataaatttta taatcaattt gcaaattcca  1680

aaaaaagtct gctgggattt tgatttgaat tgctttgaat atgtagaaca aattggaaat  1740

aattgacatc ataacaatat ttagttttct ggatcagaac aaagtatgac tctccattta  1800

ttaagttatt ctttcacttc tttcaacaat gttttatagt gttcagtgtg taggcttttc  1860
```

acatcttatg tcagatttat ctctatgtat ttaatgtttt ttaattaaaa aatttttatg 1920

aatc 1924

<210> 529

<211> 1711

<212> DNA

<213> Homo sapiens

<400> 529

aacaaaagca gggtagggct ccagctaagc cacgtaggca ctacgatggg caacagaaag 60

gttggtttct gggcaattca gagaaaccaa ggacagctac ccccagaact cagagtagcc 120

aactgggctg ctcacaggag atgccttaac tgaaaggtga tcagactcca caggagaccc 180

agagaagatg tggagggagc tcagaggctg tcctggagga gacctggaga cagctcagag 240

gctgtcccag agaagacgtg gaaagagctc agaggctgtc ccagagaaga cgtggagagc 300

tcagaggatg tcccagagaa gacgtggaga gagttcagag gctgtcccgg agaagacgtg 360

gaaagagctc agaaactcag agactgtccc ggagaagaca tggaaacagc tcagaggctg 420

tctgcaagaa gacgtgcaga gagttcagag gctgtcccgg agaagacatg gagagagctc 480

aaaggctgtc cacaagaaga tgtggagaga gttcagaggc tgtcgttact gctgcacttg 540

gctgtttttc tttggataat tattgcaatc aattttagta attcaggtgt aaatcacag 600

tcaagcacct atttacctag tggtaaaatc cttaagtaag tcatatttgg ttgggaagat 660

caaagaaatc acccagtctc ccacatccga aattgtgcag tctggactgt caggaacaaa 720

agtgaaagag agacgtcatc aaggccgggc gcggtggctc atgcctgtaa tcccagcact 780

ttggaaggcc aaggagggcg gatcatgagg tcaggagttc aagaccagcc tggccaatat 840

ggtgaaaccc tgtctgtctc tactaaaaat aaaaaaatta gccaggcgtg gtggcgggcg 900

cctgtaatcc cagctacttg ggaggctgag gcagaagaat cacttgaacc tgagaggcag 960

aggttgcaat aagccaggat tgtgccattg cactccagcc tgggagacaa agcgagactc 1020

catctcaaaa aaaaagaatg actaaaatta agaagattga tgattccaaa tattggtaaa 1080

gatgtagaac aactagaact cccacatatt gctgatgaaa atgaagaata atacattact 1140

出証特２００４－３０５９６６１

ttggaaaata ctttggtact gatttaccat atgaccccaa aatctcactt gtagaaattt   1200

atacaggaaa aatgaaaaca tatgctcaca gaaagcttgt atacacatgc ttatggcaat   1260

aaatttattt atagttgcct atcaacaagt gatgaacaaa tatatttag tatcttgata   1320

ctactttcta gctagaaaag gaatactact aagcaaaaat agaggatgaa gtagtaatat   1380

acataacata tatgaattta aaaacaccat gctgattgaa agaaaacaat tatcaaatac   1440

acagtgtaat attctattca cagaaagttt gaaaacaaaa aactatagtc tctgaaagaa   1500

aaccattggt tgcaggaagg tggggattca ttggccacaa aagggactga ggaagctttt   1560

tatgggtaat ggaaatattt tatatcttga tggtggcacc aattatacaa ctgtatgtac   1620

acatttgtca aaattctaat cgtattatac acaacatgag tgactttaac tgtctataaa   1680

ttatatctca ataaaattgg tcttaaaaga t   1711

<210> 530

<211> 2385

<212> DNA

<213> Homo sapiens

<400> 530

gaacctggtg ggaggtagtt gaatcatgga gacagttacc ccatgctgct gttctcatga   60

tagtgagtga tttctcagga gatctgatgg ttttataagg ggctttcccc actttgctga   120

gctcagctct cattcttctc ttcctgccac catgtgaaga aggacttgtt tgcttccctt   180

tccaccacga tcatacaccc attcacacgc agaagcagtg gttcagagaa acctttaatc   240

acctctttgc aattgccaat tctgcagaag ctggagatgc tggtgttcat ttggtatcag   300

gggtccccgg tggcatatag atctccagcc ttgggcaggc tctgctcagt ccctggatga   360

agaagcctgg aggttcctga gatatatcag caccacccag gctaggaagt gatgataccc   420

attttgaggt tagcatggcc aacaacggat gtgaagtgca tcgttttgat cctagtgtca   480

agtcagctca cattctggag agtcagcacc tttggtatca ccgcttgtcc attgactggc   540

gggatcccca tccagctgtt gctgcccaaa aaccacatag caacaccaga aaactgggaa   600

gcattttgaa tgaatttgga catcacaaga ttgacgttct caaggcagat ctggaaagtg   660

```
cagaatggaa agttttggaa aatcttattc tggaagatgt tcttgagcag attggacagc   720

tcatctttga gatccatctc cactggcctg ggtttgaggt cagtgtcagt gacagcagcg   780

ttgtgcggtt ctggtacagc cttctcaaag agttagaaca aaaggatttc aggctttttc   840

acagttacaa agacttatct aaacctcagc tattcttgaa gaaagacatt ttcaatgcaa   900

gtagctgtta tactctgagt tgggtgaata caagatggaa ataggatgca ggatgtcatc   960

aagagcacaa gaaaatattt gcagaatgca gcatgtccat aattctaatc atgagtttac  1020

tcatccagtc tcctgctagc ctgtgccctg cttgaggcag ggagtgtgtt attgcgggca  1080

tgcagcctag tgcttggcat gtgatggggc acagtcaata cttgttaaag ggataaacac  1140

agtcacccct atttgcccag actcttcctt caccttaact tggaagatta tccccagctc  1200

atcacagttt tccctaaaat tctctatgta tctataatct atgaattcac caacattgaa  1260

atgaaattat ataaatttcc tatttttact aggttggtga gattttttaag ttcttcccct  1320

actgtttaaa atagggtttt aaatttgaat ttgaccctcc tttttcaagg tttttcttat  1380

ttaccttgtt aatgatattc tttacaacct tgtagatttc agtcattcct tctcagcctt  1440

tgctgaggcc atgctgtggc tttctaagca gcaatacttc tgatttctgg gaactcggat  1500

gcaccaaatt ctgtcactga gttaaagaga ctagactatc aagagcttca acacgaaggt  1560

gtaagttcca gttcgagacc aagtctgaag gtcttgacct caccaagacc catgtcccag  1620

cttgaagaca gccagacaga gaattaattc ttccttactg ccttaggttc tattcaggcc  1680

ttcaactggt tgaatgaggt ccacttacac tgaggtgaag aatctgattt atttagtcta  1740

ctgatttaaa tattaatttc atctggaaat atccttacag atacacctag aataatgttt  1800

aactaaagat ctggacaccc tttagtccag ttaagttgac acataaaatt aaccattgta  1860

ggtaggtagg tagataaata gatagatgat agatagatag atagatagat agatagatag  1920

ataagataga ttttcctact ggcatgtttc accattttct tgactcacat attctggttt  1980

ccatctggct ccttcggtct gtgctctcct cactgaagta aggcctttaa tgattacttc  2040

attataagtc catgagtaat atggtttggc tacgtcccca accaaatctc atcttgaatt  2100

gtagttccca taatccccac gtgttgtggg agggacctgg tgagaggtaa ttgaatcatg  2160

gggttggttt cctccatgct attctcatga tactgagtaa gttctcatga gatctgatgg  2220

ttttataaga ggtgtccccc ttcacttggc tctcattttt ctccttcctg ctgccatatg  2280

aagaaggatg tgtttgcttc cccttccacc acgactgtaa gtttcctgag gcctcgccag  2340

ccatgctaaa ctgtgagtca attaaatctc tttcctctat aaatt                  2385
```

<210> 531

<211> 3177

<212> DNA

<213> Homo sapiens

<400> 531

```
cctggcccct gacctcccat gcccctatct gtgcctccac ccatccccgc aagctctgtc      60
ccctccccac acttccctgc ccttttcccc tcccttcta caatcccct accctcatcc      120
ccctcctctc cttctgatcc ccagcctccc attctctcag tctctcccac cccactcagc      180
ctcctatcac ctggcctcca cctccccacc tcctgtcccc cgactttcta taccccagt      240
ctcctgtcct ctcagtcttc cctgccatcc ccctttctga tccctggcc tccttttcca      300
tcccacctcc agctttctgt cttccctgcc ttctggcctc tcagtttccc actcccccgc      360
ccccaccagc cacctgtctc ccctgagcct ctcatcccct cctcattttt ttttttttag      420
acagagtctc gctctgccgc ccaggcgccc aggcgcccag gctggagtgc agtggtgcga      480
tctcagctca ctgcaacctc tgcctcctgg gttccagtga ttctcctgct tcagcttccc      540
tagtagctgg gattacaggc acccgccgcc atctctacta aaaatacaaa attagccagg      600
cgtggtggcg catgcctgta atctcagcta cttggaaggg tgaggcagga gagtcgcttg      660
aacctcagag gcggaggttg cagtgagccg atatcatgcc actgtgctcc agcccgggca      720
acgagagcga aactccgtct caaacacaaa cagacaaaca aaaactattc agcatatctt      780
cagtaaaatc ttccttaatc cttttttagg ctcctatttt ctgagcacct aattgagtgc      840
cgggcatccc ctaagcattc actggatctt cacacccacc ctgtgatgta cacgttttc      900
ttctgcctga aatgtcctaa gctgcccctc cgagagtcac tgcctcaggg aggtcctcac      960
ttccagggac agcagagtat gacggttaag cagggaaact ctccagctag atggcctggg      1020
ttcaaatcct agctctgtcc cttccagctg tgtaatactg gtcgcgttac tgaacctctc      1080
catgcctcag tgtccccaac tataaaaacg agatgtcata atagtcacct tactgggatg      1140
ttgtgattag ataaattaat ccatgccagt gcctggtata gagtaatggg gagctgtgtt      1200
tgctctggaa tgtcacgctg agaacccggg acttagggac cataggaagc ctgggaggct      1260
```

tggaggggaa aaggagaggc atttgagaac cagcttaggt ccccagtagt gcctcctctc 1320

tccccgtccc atcccggttg ctgcttccgt gtccctcccg ggagaattat ttagggaggg 1380

ggcggggtca tcatcctggc tccgcccccct gggttgtgaa atctacaccc gccaggctcc 1440

agaaccccac ctaccacata ccacctgttc atgctctccc atcagggacc acgaagccag 1500

tcctcagctg tgacgctgaa gtttgatccc gcggggacac catcgtatta aaacgctcag 1560

agactgagtc acagagaggg gtgtggccgg cattttagtt ccgcccctgc cggagtagcc 1620

gaaggcctca ttggcgcctt cacgcttcag ctgcgcttag tagccgcggc gtaattggat 1680

aaaagcccgt ggaggggggcg ggatcccagg ggggtttcta cgattagtca atacccagga 1740

gggcgggata gaaaggtgca gatctacgac ccgattggct tcgggctcag ctgggaggcg 1800

ggacgaatta ttggttgggg gaaacccacg aggggacgcg gccgaggagg gtcgctgtcc 1860

acccgggggc gtgggagtga ggtaccagat tcagcccatt tggccccgac gcctctgttc 1920

tcggaatccg ggtgctgcgg attgaggtcc cggttcctaa cggtgggatc ggtgtcctcg 1980

ggatgagatt tggcgtttcc tcggggcttt ggtgggatcg gtgtcctcag gatgagattt 2040

agggtttcct cggggctttc gggatcttca cctaatatcc ggtattattt tatgagagga 2100

gtggtcttgg ctgtcagaac tggatccctg gggtgatatt tgggaattag tggagtgatc 2160

tctgaagacc tagggctatg atctggagct gctgtggctg aaatttgggg cctctgaagt 2220

ggcatggaga ttgaggtcca gagagcctga gatcttgagg gctgacattt ggagagatgg 2280

ggtcgagggt tgtctttggg ccttgactgc tttaggcctt tctcactctc attcccggga 2340

tgctttgcca gaatctctgc tggattggcc gtaaccctgt ccccgagcgg gctcacaggg 2400

tctgaaggcc acgcatgagg caaaggtaaa gttctgagcc acccggtgcc tccttcccag 2460

gactgcaaga tggaggaagg cgggaaccta ggaggcctga ttaagatggt ccatctactg 2520

gtcttgtcag gtgcctgggg catgcaaatg tgggtgacct tcgtctcagg tagggaccct 2580

cagcttggat gtcatgggta cctggggtgg ggatggaaat aagaggggaa ccgggaagtg 2640

ccctaacacc cctgtggtcc ccataccctg caggcttcct gcttttccga agccttcccc 2700

gacatacctt cggactagtg cagagcaaac tcttcccctt ctacttccac atctccatgg 2760

gctgtgcctt catcaacctc tgcatcttgg cttcacagca tgcttgggct cagctcacat 2820

tctgggaggc cagccagctt tacctgctgt tcctgagcct tacgctggcc actgtcaacg 2880

cccgctggct ggaaccccgc accacagctg ccatgtgggc cctgcaaacc gtggagaagg 2940

agcgaggcct gggtggggag gtaccaggca gccaccaggg tcccgatccc taccgccagc 3000

tgcgagagaa ggaccccaag tacagtgctc tccgccagaa tttcttccgc taccatgggc 3060

tgtcctctct ttgcaatctg ggctgcgtcc tgagcaatgg gctctgtctc gctggccttg 3120

ccctggaaat aaggagcctc tagcatgggc cctgcatgct aataaatgct tcttcag 3177

<210> 532

<211> 2488

<212> DNA

<213> Homo sapiens

<400> 532

cttaaaagga aattccagat ggacagtttt aatatttatt tcagcattta attcaggatg 60

tttcaacatg tatctctgag cataaggatt cttgtttaag aaaaacccaa atcttctagt 120

attcaaattt ccagttgtct cagtggcata cattctaagt ttgattaaat taggacacaa 180

atgagaggcc cacacattgc aattggtcat tgtcttctga agtctcaact tattaaaatc 240

tcctgcatct tttccccctt caaatttatc tgttgaagaa accaagctgt tcacgctgtg 300

gagtgcccta gtcttgattt tgctgatttc atctgcgttg cagtttaaca ggttcctctg 360

ccctctgtat ttccttcttt cttcttcttt tttttttttt tgagatggag tctcactctg 420

ttgcccaggc tggagtgcgt tggcaaaatc ccggcgagct gcaacatcca cctcccaggt 480

tcaagcgatt ctcctgcctc agcctcccaa gtagctggga ctacaggtgc ctgccaccac 540

gcccggctca ttttttgtatt tttagtagag agggggggttt caccatgttg gccaggctgg 600

tctcgaactt cttacctcag gcgatccacc tgccttggcc tcccaaagtg ctgggattac 660

aggcacaatc caccgtgacc agcctgctct ctttatttct tatagaagat ctcgagtacc 720

atctacaggc tggataggat ttgggttgga ttttttgtgg ggaagactat ttcacaggtg 780

gtggtgtgat ctttcatcca caggcatata tctggtggta tttttgtgat ctaaggcagc 840

catggatgcc caatgcataa ttcaccagga gctagaaaat gctgatataa ttctatcagc 900

cctttactta ttagagtact tccataaaaa gaaaattctc tatgtctact acttgattgc 960

tcaaatatat gtagtttgta taaaaaaaat atgtatcttt ctgtcaagtg ttgattccct 1020

agcttcgtcc aatggtgcta ttactttaac atcaccattt atttataatc tttaaggagc 1080

tcttattctt ttatgttctt ttagcattct gttcatattt catgtctgta acatctcaaa 1140

tcccactatg ttgggtcgca ctggggttag tttttctatt tatcttggcc tttttttctt 1200

tcatgcttct ggttcacctc attcgtctgg tggtccttgg atatccattt atattttggg 1260

aggttgctag tgttgcgttt cctttgcttt tgtgaaagca ggcctgtttt actgccagtt 1320

ctcttctcct agtggggatt cttagtggga ccttcttgtg ggagtgggta tattatgaaa 1380

cttcatttaa aggtaagagt atagggagct aattgttagg ctcatggttc tctaaatgct 1440

tttctttggg gattgatgta agcactccaa gccctagtcc tcaccataca gttttttcaa 1500

ttttcttaag aaaaccccca cccccggccc ctgtgtaaat gtttactgct tttgtcctct 1560

atgcacagga gtggatatgg gagtgagatc ttttctctat ataggccctc aattaatcat 1620

catttctagt ccgatttcac actaattcta ggcccaaagc cccctattg gattttgcta 1680

gacttgctcc catctcttct gaggccccctt agtggtataa tctaagcttt ctctttcagt 1740

ttcacctgtc ttcagaaatc tacagaacag acggagtctc tcactatcac ctgggctgga 1800

gtgcaatggt gcaatctcgg ctcactgcat cctctgcctc ccgggttcac acaattctcc 1860

tgcctcagcc tcccaagtag ctgagattac aggcgcacac caccacaccc agctaatttt 1920

ttttattttt agtagagaca gggcttcact atgttggcca gactggtctc gaactcctga 1980

cctcgtcatc tgcctgcctc agcctcctga agtgctagga ttacaggcat gagccactgc 2040

gcctggcctc tttttttttt ttttttttta atttaagaga tggggtctc attatgttgc 2100

ccagactggt tacgcctata gctctagcta ctgaggatgc tgtggcagga ccatcacttg 2160

aactcctgag ctcacccaac tacagaacat ttcttagcaa aactctggcc ctttttcttt 2220

gctattacag attctttcct ttttcagtat ctataatttt attttagtag gattttagga 2280

ggggtgggtg agatgtcatt agtttgacat taagtagcaa ttagtgctct ctagaaaaac 2340

aaaattctta ttttcagcca gcttggtcaa tacagttatt ttctaaaata tattgatgtg 2400

cttggtatgg atagtatatt tagaactttt cactaaattt tcagattatt tgtatttttg 2460

atctcactaa atcatgtctg attaactt 2488

<210> 533

<211> 2238

<212> DNA

<213> Homo sapiens

<400> 533

```
ttgattctca gcggctgaag gactaagttc cccagagatg gacccgggtg tcatagctgc      60

ttccaggggc ctcggggaca caggcgggac tccaatgtgc aggaggagac acacgtcagg     120

ggtgggtgtg tgacttccac gctgctgaca gtgacccaag gatgcagctc agggtcagat     180

gccgttagat caaccacttc aatgtattat aaaactatta taaaaactat ttttgctacc     240

caggaaggta gctgagttca cttagaattc ctgtcagcta ggctgtttat ctgaaagtgg     300

ttacttgtcc ctgaccatct ggaatggctc aaatgagctc ctgcagacca cagagctcat     360

ctttgggaac ccagtctctc tttttgggga agtgagcccc ttccttggga acccctgagg     420

ccaggcatgg ccactgtgga tggtgggagg atgccccacc ctgaggaccc cagaggctcc     480

tgtggcccct tcctgggact gctggggccg gtgtgtgtca gcgttcaccc caaggccccc     540

tttcagctgg gctggacgcc aagtgccttc aggcctcatc ctgccctcca ccatcccata     600

gtcagtgagg ctgtggcatc tccctcctcg actgtcttgc cctcttggtt tttgtatcag     660

cgttttccag gctgattgct gctgaacctt ctgttttttt ttctttttct ttttgagaca     720

gtcttgctct gttgaccagg ctggagtgca gtggcatgat cttggctcac tgcaacctca     780

gcctcccgat tagctgggat tgcaggcatg tgccactatg tccgtctaat ttttgtattt     840

ttagtagaga cggggtttta ccgtgttagc caggatggtc tcggtctcct gacctcgtga     900

tccgcccacc tcggcctccg aaagtgctgg gattacaggc ataagccact gcgcccggcc     960

tggagcttcc tttctttggg ttttccgatg ttcttgactc tgttgtagct gagctagact    1020

ggggactggg tttccgggtt tgctttgtct ctgctgaagg gctgaggttt cagagccagc    1080

atgcactgca cagggagcag agggaggaag aaggatccga ctgcggagac acagtgactg    1140

aggccaaggg cagcttgggc cgggccagca gtgaggggag aggtctgggt agaaggtgtc    1200

atgctgggcg ggggcggggg gtgtcctgcg ggccttgggt ctttttgccg agttggggga    1260

cagcgaggag caagcacctg ccatcgccca ctttgttttc tgtgggacct cctaggacag    1320

tgaggcccct gcctcaccag ggcatggccc actccgctgt ccaggccttc gtcccggctg    1380

cctctgctgt ggggcaggga aggggctggg tgtccaggac acaggcgctt ccaggcttca    1440

tacacagatg ccttttctct gacgttcctt aactcccatg tgtagctata cacagaatgg    1500

gattttacat atgctggaca gaaataagag aatcaagccc cggccagaaa gattccagaa    1560
```

ctgcaaagac ctgtttgatc tgatcctcac ttgcgaagag agagtgtatg accaggtggt 1620

ggaagatctg aattccagag aacaggagac ctgccagcct gtgcacgtgg tcaatgtgga 1680

catccaggac aaccacgagg aggccaccct gggggcgttt ctcatctgtg agctctgcca 1740

gtgtatccag cacacggaag acatggagaa cgagatcgac gagctgctgc aggagttcga 1800

ggagaagagt ggccgcacct ttctgcacac cgtctgcttc tactgagccc agcgcccgca 1860

tggagccgcc tctggagctt cctgttgttc atactttttc cttcctgaca tttgtttta 1920

cttacaggtg ttctgctggt gacggtagca ttacccaaat aaactgtgca tatgaaatgg 1980

gagaggagat gccaaaacgc cagatgaaag caatcaagtt tcttcttttc cactttact 2040

tatgagcagg atattgatta caaagttttt cttctttaac caaaaaggaa agacaacggt 2100

ttgtgtgcac ttcccgacat acctgtgtct tcgtgtgcct gccttccctc cctcctcccc 2160

accgggccgg actgtacaga gccctgctgc ggcgtgttag gaatgacctg gaattgtcaa 2220

taaacagatg ctgctgtc 2238

<210> 534

<211> 2068

<212> DNA

<213> Homo sapiens

<400> 534

agataatgct gtgcggagct gctgtcgctg ctcccactgc tcccacgatg cactgcttat 60

agcagctgtc aaagatactg aggaatccac ggtggaaaaa agactttac aactggctgg 120

aagaaagggg tgtgagggag gagacatttc tgtgcagagc tgaccaaagg aaagagtagg 180

catcagtgca gtatgaatgc atacctcacc aagcaacaca gctgcagccg ggggtccgat 240

gggatggatg ccgtcaggag tgcgcccacc ctgatcaggg atgcccactg tgcttgtggc 300

tggcagagga actgtcaggg gctcgggtac agttctcaga ccatgccctc ctcaggacca 360

gggggcccag cttcaaacag gaccgggggg tccagcttca acaggacctt gtgggacagt 420

gtgcggaaaa gcccccacaa gacgagcacc aagggcaaag ggacttgtgg ggagcattgt 480

acctgcccac atggttggtt cagcccagca caggccagtc ctgctcctat aattgtcaac 540

●

```
acagatactt tggacacaat tccttatgtc aatgggacag aaattgaata tgaatttgaa    600

gaaattacac tggagagggg gaattctggc ctgggattca gtattgctgg ggggacagat    660

aatccccaca ttggagatga ccctggcata tttattacga agattatacc aggaggtgct    720

gcagcagagg atggcagact cagggtcaat gattgtatct tgcgggtgaa tgaggttgat    780

gtgtcagagg tttcccacag taaagcggtg gaagccctga aggaagcagg gtctatcgtt    840

cggctgtatg tgcgtagaag acgacctatt ttggagaccg ttgtggaaat caaactgttc    900

aaaggcccta aaggtttagg cttcagtatt gcaggaggtg tggggaacca acacattcct    960

ggagacaaca gcatttatgt aactaaaatt atagatggag gagctgcaca aaaagatgga    1020

aggttgcaag taggagatag actactaatg gtaaacaact acagtttaga agaagtaaca    1080

cacgaagagg cagtagcaat attaaagaac acatcagagg tagtttattt aaaagttggc    1140

aaacccacta ccatttatat gactgatcct tatggtccac ctgatattac tcactcttat    1200

tctccaccaa tggaaaacca tctactctct ggcaacaatg gcactttaga atataaaacc    1260

tccctgccac ccatctctcc aggaaggtac tcaccaattc caaagcacat gcttgttgac    1320

gacgactaca ccaggcctcc ggaacctgtt tacagcactg tgaacaaact atgtgataag    1380

cctgcttctc ccaggcacta ttcccctgtt gagtgtgaca aaagcttcct cctctcagct    1440

ccctattccc actaccacct aggcctgcta cctgactctg agatgaccag tcattcccaa    1500

catagcaccg caactcgtca gccttcaatg actctccaac gggccgtctc cctggaagga    1560

gagcctcgca aggtagtcct gcacaaaggc tccactggcc tgggcttcaa cattgtcggt    1620

ggggaagatg gagaaggtat ttttgtgtcc ttcattctgg ctggtggacc agcagaccta    1680

agtggggagc tccagagagg agaccagatc ctatcggtga atggcattga cctccgtggc    1740

gcatcccacg agcaggcagc tgctgcacta aagggggctg gacagacagt gacgattata    1800

gcacaatatc aacctgaagg tcagtcagaa ctcaaactaa taatgttctg atatgtctct    1860

gtgtggatct gtaccctcat tactaataat ttttattaac tagagtcacc atcattggtg    1920

ttttgtaaac ctacctatag tgaaaaattg atggttcatg tccaaagaac gtgaaccgtg    1980

gctttgttac ctctaatctt ccaggaaaat atcaagcagt tagaaaggcc tatgaaaata    2040

tgaattcaaa taaatagcaa ccagcatc                                      2068
```

<210> 535

●

<211> 2511

<212> DNA

<213> Homo sapiens

<400> 535

```
ttcccagtga agaaaagaca cagctgccac ttgtacccag attgtctgga tcctaaaatc      60

aatagcctaa aaagataata atttgcctct tacaccccac caagaaattc tgttcaattc     120

tgttgagctg agagagaaga acagggagac tggaaatatg aagaaggggg aatggcccca    ·180

gaggatttcc ctgtgtgaat tcaatttacc tttattcagg tgggagatta taggttatat     240

aaccacccc aatataaagc aatctcttcc ccgatgacac tcaaacccgg aaaacttgaa     300

tcccagggtg ttcagatttt ggtataagct gatctcccag gacctactta ggcaggatct     360

ggtgcccagg acagaacctg ttgacctggc accatggagc tgggaggggc tgtcaccatc     420

tttctggcac tccgcttgtc ttgcctgctc atcctcattg cctggaaacg aatggataag     480

gcaggaaagc tgccccagg tcccacacca attcttttcc tggggcacct gctgcaagtt     540

cgaactgatg ctacgtttca gtctttcatg aaggtgagtc tgtctgtctc ctttaatagg     600

gctaaaagca actaatccta tagccagatt cacatagaaa cttatgactt ctaaaagata     660

gactctcaga aacacagact ttgcaaatct tggaattctg aaattccaga atcctaaaat     720

gttggaaaca cacattctca gtgcattgaa ataagatttt catgatctca ggactttgga     780

atcacagtac attatatttt taaacacagg attctttgac tcagcttgtc ttagcacttt     840

gagacttggt atcatgaagt cttaagattc tagaaattta acatttcaga gagagaagta     900

tgaatcttgg aatttatcga atccaggtcc attattttgg agatgcagac agtaactctt     960

gtgggaaggg atgagctttt gccgagaatg acagaagcca agacttccgt gcctctttcc    1020

cagtattcct tccaagccca gatttacctt ggttccttag taccatgttt atatcactct    1080

aaaatcgcca tcctctaaaa tcctcaactg cctatgctt ggtactccag tcagcccctc    1140

ctcttgtgtt ttccttcact ccaagctcag ggagaaatac agccctgtgt tcactgtgta    1200

catgggtccc ggccagtggt gggtttatgt ggacacgaag cagtgaagga agccttggta    1260

gaccaagcgg atgagttcag tggccgtgga gaactggctt caataaagca aaacttccaa    1320

ggtcatggat cctgcagaga gggaacctta ctctcttgat tgagtcttga aggttgagga    1380

tggcttcctg gacagcagag tctagagctt tcataatctt tccccatcac tgcctaagca    1440
```

cagagctgaa cacagcaagg ggagggaggc agaagcctga gactgagatc ttggcaggtg 1500

tagctctggc caatggagaa cgatggagga ttctccgacg cttctccctg accatccttc 1560

gggacttcgg gatgggaaag cagagcatta aggagcgaat tcaggaggag gccagctacc 1620

tactggagga gttccggaag accaagctaa gattcacgaa gagattaacc aggtgattgg 1680

accacaccgg ctcccaaggg tggatgaccg ggtcaagatg ccctacacag atgtcgttat 1740

ccatgaaata cagagactgg tagacatcgt gcccatgggt gtcccccaca acatcatcca 1800

ggacactcag tttcgaggtt accttctgcc caagggcaca gacgtatttc ccctgcttgg 1860

ctctgtcctc aaagacccca aatacttccg ctacccagat gccttctatc cccagcactt 1920

tctggatgag cagggccgct tcaagaagaa tgaagccttt gtgccttttt cctctggaaa 1980

gcgcatctgc ttgggcgagg ccatggcccg catggaactc tttctctact tcacctccac 2040

ccttcagaac ttctctctat gctcgctggt gccacttgtg gacatcgata tcacccccaa 2100

gctctcaggc tttggcaaca tcaccccgac ctatgagctc tgccttgtgg cccgctgagc 2160

cacacctcct gcggggcaag gaggaagtgg tgaagaatgc agctctcctc tcgtgttcag 2220

gagcaccccc tcttcctcat cttactaatc ctcaagcatc cctaagagga ggcactatga 2280

ttacagagtc agccagggtc acctgagaat gtacagctgc gtgtcttcct ctcccgtaga 2340

agagcaacgc cctgtgcaag atttgcacct ctgcctgcag gtttcatggt cacatggtca 2400

ccgttgctta ggtttctggc tgcatcaaat tattactgca gtccctgtgt cttcatgttg 2460

tccctttttg tgtgtgctct gattttgacc aaaatgtagt ctaaaatctt t 2511

<210> 536

<211> 2036

<212> DNA

<213> Homo sapiens

<400> 536

agacaccgag tctcgccttc tgagattggc aggtaaccta gcaacgcagg gaccgcggcg 60

gtaactgtgg ctagggaaac ctggagcggt cagagcagga tggccagaga caataaaagc 120

acgagaccca agtagtctac cgaagtctcc atctctgtgg acctacagag gcacagaggg 180

```
ctgctcacaa gatggcttta gacattctcg ccatggcccc tttgtatcag gcccctgcca   240

tcaacagaat agggccaaag acagacccat ctaaaaggcc agctgatcca ctaaaaccct   300

tggttctctc taggaccaaa ctcaccacca ttgaggccaa aaggatcatg tccatcctgg   360

atgaggcgat ctacaaggtg gagctggtga ccttgctgtc gtatgtggca tccaacagag   420

aggatatgga ggggatgctg ggggaggacg tcatgagggc agtgagagag catgaggatc   480

tctgccaggt cctccttgaa aacgtcaggt gcctgaaaga gaaagaaagg caattgcagg   540

agcagaaaga ggctgaggag gaagggtggc tcagagaccg cctcctttcc atagagctgc   600

agaaatccag cctctcacca cttatgcagc agatcaaaga ctccaccaag aacgtcctta   660

gactcttgct cagcaacccc caggctgcta ggctcctgca gatgcagaca cagggtagaa   720

gtgcagaagc ccagaatttt attgacagcc tgatagagct ccgtggtttc ctgtttgaaa   780

aactactcac tagtcccatg gaagcgaggg ataaggccca gttcttacag gatatcagta   840

gacagaatag taataaccaa caaatcattg atactcttga aaaggaattg gcggagagaa   900

tgaagaacag gaatgcagag gtattgtttc atagtattgc tgaaattact gaagaagcca   960

cacaaatctt ttgttggttg ggttttttcct caatgattga tttttttttt aagatggagt  1020

ctcgctctgt tgtccagact agagtgcagt ggtgtaatct cgactcactg caacctctgc  1080

ctcccaggtt caagcgattc tcccaccaca gcctcccaag tagttgggat tacaggcgta  1140

tgccaccgcg cccggctaat ttttgtatt tttagtagag acagggtcac accattctcc  1200

tgcctcagcc tcccgagtag ctgggactac aggtgcccac cactgtactc cagcctggct  1260

gcagagcaag accctgtctc aaaaaaaaaa aaaagggaa acagtagcat gatcccaaac  1320

cctaataata attgtcatat tgcacacata cagtgtattt agtttaacat acattttctc  1380

tctaaatctt tacaaaaacc ctgtgagatg gtgtatgagt acagatttgg ctgctataac  1440

agagacaccc gaaatagctg tggcttagtc aagatggcag tgtatttctc tgtagtggaa  1500

acaccggagc tggtgtggca tctctgctcc ccaacttgtc agaggtctgg tttcttctat  1560

gtgacttccc tgctgtcccc aacatgggac ttctgcttgt gggccaagat ggctgctcca  1620

gctttcccca tcatgtggcc cccagtctag ccagcaggaa ggaggaaagg ggaggagagg  1680

gcttggttct gccccttaag gacacgtgtg gaggtggcac acagaacttc catgcatatc  1740

ttgtagccac acccagcaga gagaagtgct aggaaggacc gaccacccgt cactggggct  1800

gtgttatgct ccacattcta ccccacagcc tctctgggga gagcagacat gggggtagcc  1860

aggctgcact gccacaggcc cttctgtttc tatcccccac cactgatgaa agattcaagg  1920
```

ccctgggaaa ctattcacag ccccctccct ggtgctgggt tgggcacttc tcactgaatt 1980

tgtcctttaa agcattcacc tgactttgtg gataacattc acctgacttt gtggat 2036

<210> 537

<211> 1981

<212> DNA

<213> Homo sapiens

<400> 537

ttttcccttc gtttcttgaa gtaggaattt agagaagcga tttgagatct ttctcctttc 60

ctgatacagg cattgagtgc tgtccgtttc cctctaagca ctgccttggg tgcgtctggc 120

aaatttcatt atgctgtatt cttgtttcca ttctgttctc tttttttattt ccttcgaggc 180

atcccatttg actcgtggat tacttagaag tgtgctgttt aatttccagg cacttacagt 240

tttcctgttg tctttctctg actggtttct ggttttgatg tccactggtg tggcctccac 300

ctcttcacgc caccccacag atgaacagca ttcacataac ttcccagtat ctcgaagtag 360

catcgtttcc atttcctgcg tgtcttctca ttttactgca ttatttcagc tttccttgtt 420

tgagccagga ttcagggctt ccttcattcc atctctagct tcctcccctc gagtttccca 480

gttcatggag tttctcttgg accctcagca gcagggggtc ttgttcttga caggaatccc 540

tcacacttcc cccttggcct ccgagcccca ccacatcctg cggttggtgg tgtgtggaga 600

aagtggtgtg tggagagagt tggtggtgtg cgctgtctct gctctccaag ccctttgtca 660

gcccccaccc ctccctcact ccgtgcctct tgtccgtgcc cgctgggaca ccatggggct 720

cggctcaggg gatggtggga ccagcgctta gtaagactag tcagccctag gcaccgagtg 780

agcactgctc acgtggcaga gctggaatgg gggccgggca cacaatccct ggcccacgtg 840

ttccacggac atgctgcaga ggtccccggc cctccagggc aggccctctc tgcttccaga 900

ggggcaggtg agccccaggc caggccagcg agggtctgga ctagagtgca gtggccacaa 960

tggacgccgc gagtgtcttc attaagagtg agtgtctcag tctcccccag ggcgcccgcc 1020

agccacaggg ccgctatgtg cgcagactag acaggtggca gctcgggccg gccaggcaga 1080

gggagaggaa gccagagcct gcgcgcaggc agcctcagaa gtatttccag ccacagccaa 1140

```
cgtgtcttac tggcaatttg ctttttaaaa aattgcagtt taattttaag tgagcagccc   1200
gtaattacag tgatttacga ggtacctggg gactgtgtga tatttgaaca tggcagaggg   1260
ctgagcagcg atggcagaga tggatgggcc cggcgccact cattcagcag gtcctgctaa   1320
tgccggagcg ttagaccgag gtggagcctc ccaatgtggc tgggtacgct ggggggaaacg   1380
gagtcagagg tgggctgcac agcaggtcga cttgttcacc gggggctggt gttttgcaaa   1440
cgctgggtct gccttcgtgt ggggtttgag ctgggagagt agcactggtt actcctgcct   1500
gtctccgtcc accccaccc ccacctggag ggcagcgcgg tatattaggg catcattctt   1560
ccagagccgc ctgaggccgg cagagaggag gtgctgtagg agccgtgagt gggttgcccg   1620
gcctaccatt gggagcagct gtcttgctga cgctggcggg gtgcacctgt ttcaaataaa   1680
gaatgatcag agctcacgcc tgtaatcctc acgtcgtggg cagctgaggc aggaggatca   1740
cgtcaggcca ggagtttgag accagccagg ccaggagttt gagaccagcc tgggcaaaat   1800
agctaaagtc tatctatctc tcaaaaaaat ttaaaaatta gccaggtgtg ctggcacatg   1860
cctgtcattc caactgctca ggaggctgag gtggatcact tgagtccggg agctcgaggc   1920
tgagtgaccc gttatcatgc cactgcactc cagcctgggt gacagagtga gactcgtctc   1980
t                                                                    1981
```

<210> 538

<211> 2745

<212> DNA

<213> Homo sapiens

<400> 538

```
agtgtgaaga ttccccctc actcaccaga tcatctccat ggcaacagct tgcagcctgc     60
tcttggagtg ctttgttttg gcagcttctc tgctagtttg tgtatggagt gaatggagga    120
ggtaaatcca cagattaaga atatgctgtc aggagtcagg cagccaaggt cagaagccag    180
ctctgcttct cagtggctct gacagccagg ccagtgatga tgaggtccat cttcctgcca    240
caccgaaagc tcatctgcag tcggagaggc catctagacc ccagaggttg ggaagaagat    300
gagaaaatct tggtacctga tgccattccc actcttcctc cttatgtatt catcaggacg    360
```

```
gaccaggctt gtgttaaggt gtacccggga tttgtttttaa tcaggaatgg caagactcac    420

aggcacagag gtgattgtca tgaggaagaa gtctgtgctc acagaaccct agaaacagga    480

ggcatggcat gccacgtagg gccacatggg gaaggaccat ctctctgggg cttttgggga    540

agttggaaac aggtgctctt tttccttccc gttgatcatt aaacattgag tccctcgtct    600

ctagggaggg gacttcttat ttacccctgg gttgggaaat aaatcatgac agcagcaatc    660

agacaacagc agagaagtgt gtgatctgaa catctgtggg atgccgtgat ccctggagga    720

gcccttcaca ctgatcccat gaatggccct caacacatgc acgagcaagg agcaagcgtt    780

ccgacaagtg ctctcgcagt actccaagga agaggctgaa atttgactca gcaaagccca    840

gagggaaaag ggaaagtggt ttatgagtgt cctcaggagc tatcacatcc tagacactag    900

gcactttcat ctaaatgact ctgatgaccc cagtgttgtc agtgctcctc agtcagtgga    960

tcagacttgc ccttggcatg aggaggatag tcagtcactc ctggtcccct tcagagggac   1020

cttttgagaa aaaaatatag ccaattactt atgtaacccc aggcactctg tcctgaatcc   1080

tgggcattcc accaccgtgg agaaataggt tagtcccaga cacatgacac cagcctatga   1140

ggcagctccg ggactcagct gctcgaacga gcgtcgcaat ttcaagttgg gaattaacgg   1200

caacacctga caacacaaca caatgcagta gccatcaagc aggaagcccg agcactccac   1260

tctcagctgt accttgccaa gcagtggctg ctgtctgtcg ggagcaggta gcaagtcaag   1320

atcagtctaa ggacattcca tgtccatctg gcatcaaacc accctgctac ctatgccagt   1380

tgttctcagg atttgtttta atcaggaatg gtaagacata aggcacacag acgtggaaat   1440

gattatcatg aaggaagaag tttgtgctca tagagctcta gaagcaggag gtgtggcaca   1500

cggggccaca tggttcggaa ggataagtgt tggtcaggag gcagggagag gggagagcat   1560

ggccccaagc ctttattggg gttttcatag gaaggaatgg ttaagacaag gtacatatgc   1620

tggctaagtt tagggttgga tagtttgaat aatttggatg ggttcagggc cataggggatg   1680

gtcccgagtt gtctgaccct agggtgactt agggcagaga gaatattggc ttggtgtgtg   1740

agagtttggt tttaaaaaga agaagatggt tgggagtgtg ggctccagat tagctggttt   1800

gtacatcaaa ggcacgctcc caggagaatt gtttgccacc ccgcccccga cccgtgtgtc   1860

tctctctctc tctctctctc tctctctctc taggaatttg ctagccctga atggggtgac   1920

ctctttggat caaggaccca aatgttagcg catgaagaat acagaaaata agaacatata   1980

ctcaatacaa ggttatgctg cagtaacaaa caatcccaag gttgcagtgg cttttttacac   2040

aactaaagtt tctttgccaa tgctgcacat tcactgcagg ttggaggagg agggcgggta   2100
```

```
gtctgctcac tgtaatcact aagggcccag gatgatggaa gtttcatctc aacacatgcc   2160
tccacaatca ccaaggcagg gaaagggact atggcaaatt gcacctgtga tcttaaagct   2220
cctgcccaga agtaacagtc aaatcatatg ggcacaccta accatgaaag ggcagagaag   2280
ctgaatccta ccatgtgcca ggatggaaga gaagtgggat atttgtgatt agttctgatg   2340
actactgaca cctgtcattg gaaccaaaag attcctcttt tgcttaagca aaaggaagaa   2400
gaattgttca aaagaattgt ggccaggtgc agtggcttgc gcctgcaatc ctagcacttt   2460
gggaggccaa ggcgggcaga tcacttgagg ccaagcgttt gagactggcc tgggcaagat   2520
ggtgaaactc tgtcgctaca taaaatacaa atatcagctg ggcatgctgg tgtatgcctg   2580
tagtcccagc tattcaggag gctgaggtgg gaggacttct tgagcttgac tgaggtggca   2640
gtgagctgag atcgcaccac tgctctccag cctaggtgac agagtgagac tctgtctcaa   2700
aataaaaata aaaagaatt gtaataatac atgccccaac acccc                     2745
```

<210> 539

<211> 1908

<212> DNA

<213> Homo sapiens

<400> 539

```
acctcttcga ggccccgctg cgggcgtcca gagctgggga ctgtgggtct gactcctgcg    60
ttccagccgt gggtgccacc tcttgcggga agcagggcaa aaccactttg gtcaggcgct   120
cctcgtgcct ttctcccttc gtaggtgacc agcatctcgt aagaatgata accatcagta   180
accgggaccc caaaccttct catcaaggca cctctcgggt caccattact ttaactttga   240
atttgggtct ccttcatttt tccgctggat gcgttaatgt gcgcgaccca cagctccagg   300
cggcggtttc ctggcggaac tggaccaccg ccacaggctg ggggtctgca gtgggggatg   360
ggaccggccg cggccgccgg ccccttccgc gtccactgag ccggcgctgg ttcggcactg   420
ggatcctgca ccgggcctct ctgcttggtg ctgcgcgtct gcctgagagt aggaggttgc   480
tcccagctgt gccggcccca gcagaaggct gctggtggtg gtgctggggc aggtcggcct   540
tgaatccatg cgacaggaag ggacgttacc agaagagatt catcgctttc tcttggtctg   600
```

```
ggcagcccgg gccttttgag ggtgggaccg ctgctacccc caccccccagg ttctttgcct    660

gcctgttgac tgccggtgtt tcatgttttg tttctctgtt tcactatttt ttattttttg    720

ccttaaaaaa aaaagtatta ccatgcagca gttgcccatt tattttaatt tactattaat    780

agtgtgattg ctgtgtttct tcctacaaac actgaagcct gaaatccgcc cgagtccgga    840

ttctcgcctg ccaaaaggga attggccccg caacctccag cttagactcc caactcttct    900

ttctttccat tggcagctgc tgcaggcagg acaaggggct ccccttctct ccagtggggc    960

cttcacctct ccctgctgca caattcttcc tccttcccag tccctaggga gagaagtata   1020

ttcgtggacg cattttccaa agcaaaagta gcacgcccat cagctggcca ttctaagtgc   1080

ctctggaaag gggccaggca tttgaaatga gaaaacccca ctgtgcctct gtgagctgcc   1140

agcccggacg gctgcaacca aggtgccatt gtgtcgggtc cccagggcag catctctctg   1200

gacacaatgg gctgtgggac tttaggagcc caggtcctca tccaccttgg gcatctcata   1260

gctcgttagt tggacctgct ggcctctgag aggacatctt cttcctcccc aggagaccgt   1320

cctgggaaca agccttaaag caaggtggcc acaggaagcc gcagcctgaa gagaggtgag   1380

atgaccctca ggcagtccag cgaaagctgc ttggagattt cctatcagca catactaatt   1440

aagaacaaga agatcctatc aactcctaat aatgtcctta cctggcctgg agggcttttg   1500

tttgtggttt ggtttggtga tttcctactt atttcaagcc tttgttgcta actcattcct   1560

acttgggcct gagcctttgg ggaaagctcg ctcccagggg caactcagtg gagctcagca   1620

gtcccagccc tcctttgata aggcagaggg gcagcaatct ctgaaagagg cttcagagga   1680

tgaggaaggc agcccggcca gggtcaaggg ggtttgtccc tatctctgtg accccctcct   1740

cccacctgga gttctccgct cgacgttcat cttcctgacc agactctacc ctcggcaggg   1800

catcctccag ccacccccat ctgcccctct ccttccccac cctagcatat gctcagcacc   1860

caagcagagc ccagcctctg gtgagtgctc attaaacctt agccaatg             1908
```

<210> 540

<211> 1931

<212> DNA

<213> Homo sapiens

<400> 540

cggattgatg	ccagccagtt	ccgggaactc	tttgccagcc	tgacaccctg	ggcctgtggc	60
tcccacacac	ctctgctggc	agggcgcatg	ttcaggctcc	tggacgaaaa	caaggactcg	120
ctgatcaact	tcaaggagtt	cgtgacaggg	atgagcggga	tgtaccacgg	ggacctgaca	180
gagaagctca	aggtgctcta	caagctacac	cttcccccag	gtgagagcct	cctgcccact	240
ccccagccag	ggtctcccac	ttgtccagaa	gttcagctgc	agaggacagg	cctctgtgag	300
actgtggggc	ctcgaggggg	cacagcagcg	tcgcaggctg	gaggttcaca	ttggaggaga	360
gggagcggga	gcttgagcac	ttcacagagg	tctgagagca	gggccttggc	ctgggaaggg	420
acgtggagga	gaatcccatg	ggtgaccggg	cactgctggg	tacagaactc	ccaccgagga	480
ggcagctgga	cccaaaaccc	actaggaggg	ccatgagtgg	agcttcaggg	ctggaaccta	540
aactgctgca	tttatctgtc	aagtttctta	agggtttatt	cccagagttt	cagctagaga	600
atcctgtcac	atggccatga	ggaggggcca	cttctctctg	gcctctcagt	ggtgctgtag	660
cctagtgggg	ctgcactggc	gacaggctgt	ctgtgcaggg	ggcagggctc	agcaggagtg	720
gctgcatgga	caatgctcca	aggaggggtc	atctccctca	tcacagaagg	aaacaaaggc	780
gcaggcaggt	ggaaatcctg	ggctgggcac	tctgctgtgg	ctggacctgc	cccaggtccc	840
tgctgtcgct	ttgccatctg	aggttagcag	ctgccctcag	aaccgacccc	ggggatgttt	900
agaatactgg	ggctgagctt	cacccgagga	gattctcact	tgattgcctg	tgatggggcc	960
cagacctgtg	gtttttaaag	ctggcaggcc	attgctctgt	gcctccagag	ctgaaggctc	1020
ttgacatagc	tgttctcgtt	tgtggctggc	tcaccagaga	ggccgtggta	ggacagaccc	1080
cactgggcct	ggtcccaggg	ttgagagcat	gcggggctac	cctgagactc	ctgagcctcc	1140
tcagcctgcc	ctgccctgtc	ctgtccagac	acagagaaca	cttgggctct	gctgggcttg	1200
tggcccatgc	ccgctacact	cacccaggac	catgcgatcc	gcaaccctgg	gtactgcttg	1260
gtgacctcca	gcaaagactg	cactgaatga	ggccggccag	cacgcacaac	gcggcccgac	1320
ctctgagcta	cccaaaggga	gagcagcaag	ttgcctgtgc	gtggctggtt	cctgtgcgcc	1380
cataggagca	tgaaacgccc	ccaaagggcc	cactggccag	atggtcactg	gggcaggcgg	1440
gcagctgcca	ttcactggac	tcctaattgt	gttgattgga	tttttacctg	ggacatgtat	1500
ttccttttca	aacacaatgt	caaagtcagg	aaagcggctg	gatgcagtag	gaggcccagg	1560
cgggtggatc	acttgaagtc	aggagttgga	gaccagcctg	gccaacacga	tgaaacctgt	1620
ctctactaaa	aatacaaaaa	ttagctgggc	gtggtggtgt	gtgcttgtag	tcccagctac	1680

ttgggaggct gaggcgggag aatcacctga acccggtagg tggaggttgc agtgagccga 1740

gatcgtgcca ttgaactcca gcctgggcaa caagagcaaa actccaggct gggtgcggtg 1800

gctcacgcct gtaatcccag cactttggga ggctgaggtg ggagaatcac tgtagcccag 1860

taggcggagc ttgcagtgag ctgagatcat gtgactgcac tgcagcatgg gtgataaagt 1920

gagagtccat t 1931

<210> 541

<211> 2387

<212> DNA

<213> Homo sapiens

<400> 541

cctggaggca ccctggtgtg ggctgtgggc ctgggggtcc ttggcactgt ccagtatgcg 60

gacgtggcag cagcccacat ttcccccagt gaccaccagg ctgtgccctg gacgtggccg 120

cctgagcacg gcatgtcctg gggccccgtc tggtggtcag gctcagtacg agcccatcag 180

gggtactctg cccgcctggg aagacagtgt ggcttctggg ggctcctcca gggaggctct 240

ggaccaggct gcagaggatg ccaacctgcc acaggctggc ctggccgctc atggacatgg 300

cggctcctgg cccagggtct ctcccccggg aacccaggcg tgctcgcggc cctctggaat 360

gcaggcgctg gggctgtggg gggccgcctg gcgcctggca tcttgttata aaaagctctg 420

gcgcaggctg ctctcagtgg ctgcaggatg gttgtggctt tggaagggca gcccccaggg 480

gccttggtca gccacctgtg ggccccactg ccgagccgtg gtcagccctc actggctgcc 540

ctgccatgac gctgctgagg tcagtgcagc tcccgccaga ctcccgtgac aagtcataac 600

agagccacat gctgggtggc tgcagggccc tgtcgcccac agcagtcgag gtctcaggtg 660

tgtccggagg gcagccctgg agacacctgg acaggcgta cctctggcag gcgcaccctg 720

gctgtcaccc agtgtgggca tggtgggggt gctggaatgc tgtgtagggc aggaggcagc 780

agcccgtggc tgggtgggag actgcagggt agacgggacg ggaccaggag ggttgttcgc 840

agggactgcc aagccatccc caggtgtcga gagtgtgagg taggagtggg agcccagagc 900

cggctccagg ccaccccaac tcccgacagc tctcggctgt tctgtgtgag gggggacggg 960

gccgagtgtg ggtcggcgca gtgctgaggt gtcccacgta ccccagcact gtgctgaatg 1020

cattgaaatc actgcccagg gctccgcgag ctgcacggcc cggctttgtc aatttcattg 1080

ctgttgatgc caattagggg tgacgctgtc cctcccgcat cccagggtgg gcagagggag 1140

gggccggctt gttccctggg ggcaggcgtg catggagtca gcctggccat ggagctgtag 1200

ccaagagggc agcgggggca gctggactgg ggtttttgcc gacgctctaa tttggcggct 1260

gtcgccaccc ctccccccca tggagaccct gacgtggcct gagccagact ccaggggcca 1320

tgtgccctgc tggggagcag gggctcagca tcaggtctgg tgcactgact gggagagggg 1380

ggtctccagc cctggacagg ctctgagtgg ggtggggtcc cccagctgct gtgcccagcc 1440

ctgcccccag gacctggcct tggccctgcg ctggccgggg ccagggaggg agtgggccca 1500

gctcccaagt ctgtgtgacc acctcggctg gggcactgac agcccggggt gcggagggcc 1560

cagcccgtga cacccgccgt cagccgcgcc ctctgcctcc agcccgtgga ccgggagccc 1620

gtggaccggg agccggtggt gtgccacccc gacctggagg agcggctgca ggcctggcca 1680

gcggagctgc ctgatgagtt ctttgagctg acggtggacg acgtgagaag acgcttggcc 1740

cagctcaaga gtgagcggaa gcgcctggaa gaagccccct tggtgaccaa ggccttcagg 1800

gaggcgcaga taaaggagaa gctggagcgc tacccaaagg tggctctgag ggtcctgttc 1860

cccgaccgct acgtcctaca gggcttcttc cgccccagcg agacagtggg ggacttgcga 1920

gacttcgtga ggagccacct ggggaacccc gagctgtcat tttacctgtt catcacccct 1980

ccaaaaacag tcctggacga ccacacgcag accctctttc aggcgaacct cttcccggcc 2040

gctctggtgc acttgggagc cgaggagccg gcaggtgtct acctggagcc tggcctgctg 2100

gagcatgcca tctccccatc tgcggccgac gtgctggtgg ccaggtacat gtccagggcc 2160

gccgggtccc cttccccatt gccagcccct gaccctgcac ctaagtctga gccagctgct 2220

gaggaggggg cgctggtccc ccctgagccc atcccaggga cggcccagcc cgtgaagagg 2280

agcctgggca agccagcaag aggtgagagc tgccagcctg gggtgcccac tccgccagcc 2340

acaggaccac ctcctctgcc agcaggaata aagacttgtg catccct 2387

<210> 542

<211> 1839

<212> DNA

<213> Homo sapiens

<400> 542

aggcccaggt	ccccatccag	gccaactttg	atgccagcca	ggtgtgccca	gccctgtttc	60
ctcctcatct	ccaatgagtc	ctcccggctt	tggtgctgca	ccccgggtcc	ctgtccacac	120
cctctttgat	ccaggctcag	cagggctagg	ggcaggggaa	accccoacct	cacccgctcc	180
gtctgactgg	agtaggggtt	ggctggggaa	gactgcagcc	tccatcctac	cttttcagtt	240
gcatccccca	acactcccca	gggcccaaaa	tagggacaag	ttggttgcct	gtgcctcact	300
gtcccccacc	caccccacaa	agacctgtga	ccttgccaca	gccccaccca	tccagccgta	360
cccctgggt	gccagctgca	gacaggccgg	tgctgggctg	gtgggggcca	gttgctcatg	420
tactgaggcc	ccctccctc	agttctgcat	cggggtcgag	atgtgtacag	cagcccctgc	480
cgtggccagg	aagcagctgt	gtcggggcag	aatgtggtgg	gctcaggccc	agggcacagg	540
ggcggcctcc	cagccttccc	tgcacttgcc	ctgcagttcc	agggcacctg	gtacatggtc	600
ggggtggtgt	cagatgacca	ggacttcctg	gactccaagg	acaccatgaa	gatggctgtg	660
gtcttagtga	ccccttggg	gaatggtgac	ctggccctca	agtttggata	ccccacgccc	720
catggcgggt	gccagaaaat	ggacacgacc	ttcaccgagg	gtgctgtacc	ggggcagttc	780
agcaacccag	ccatgaccct	gagtgacatc	cgagtggcct	tctccgacta	ccagcacttt	840
gccttgctgt	acttggagat	gcggaaaggg	ggcctgcgga	accagtggct	gcagctctac	900
ggtgggcggg	ctgcggggcg	gagacccaga	caccccgct	tcgggtctgg	gatgtcaccc	960
ctgtgcctgc	accagccctt	tctgcacgcg	gaaggtggaa	ccgctggctc	ctggtgtctg	1020
tggccgcggg	tcccggcccc	tccctgcccc	tctctccctc	tcttcgcccc	tccagccct	1080
tccctttagc	ttacccgccc	tccccacctt	cagctcgagc	gcccgagctg	tttcccgaag	1140
gcgcccagaa	gatgcagcta	ctggcgcccc	aagtgggcct	gagccccagc	cagggcgtcc	1200
tgctgccgaa	gtcgggtgag	cggtgccggc	agccctgctg	ggagggccag	gccccgggtc	1260
acacccctgc	tggaagggcc	aggccctggt	cactccactg	atctcagatt	cgggacagaa	1320
gtgcccgggg	cagacccagc	ctgtctgggt	cggggggaggg	cgagacgttg	cccaggccgg	1380
tgttcccagg	aggagatcgc	cttggggcag	gtcggggggcc	tccgtcccag	ggaaggggggc	1440
gcggggtggc	gcctcaggct	cgatctctct	gcagaccagt	gtgcgggcgc	gctctcccgg	1500
gtgagtagac	catggccatg	cggagccgcg	gaccatgggc	cctcccagct	cggtgggctg	1560

●

```
caccgcgggg ccctctacct tcggggcagc tagggacgac agcggggggtg atggggcacc   1620

cgggcggatc cgagccgcag cagcctgggg aaccgcgggg ctgcgcgtcg ggaggggggcg   1680

gaggcagggg acgccgccca cctgctcctt gttttgcagt gaggggtcca gcccctgagt   1740

gcccgcaggg gtcagctgct ccgtgcgccc agccctgccc aaagagcccc ctccctccac   1800

accctggccc caagcgcaat aaacaccctg aatgcctgt                          1839
```

<210> 543

<211> 2761

●

<212> DNA

<213> Homo sapiens

<400> 543

```
gttccaccat cgctgctgga gcagctgcct tcaggccctg cgccgcctcc ggagtccatg     60

gccggcacgc gctgggtact cggggcgctg ctccggggct gcggctgtaa ctgcagcagc    120

tgccggcgca ccggcgccgc ctgcctgccc ttctactccg ccgctggctc tatcccgtcg    180

ggcgtctcgg gccgccgccg cctgctgctg ctgctcgggg ccgcggccgc cgcgtcctac    240

cctgccctcc gtgcctctct gctgccgcag tcgctggcgg cggcggccgc cgtcccgacg    300

cgcagctaca gccaggagtc caaaactact tacctggaag accttccacc accccctgag    360

●

tatgaattgg ccccgtccaa gttagaagag gaagtggatg atgtctttct cattcgagct    420

caaggactgc cctggtcatg cactatggaa gatgtgctta actttttttc agactgcaga    480

atccgcaacg gtgagaatgg aatacatttt ctcctaaaca gagatgggaa acgaaggggt    540

gatgccttaa ttgaaatgga gtcagagcag gatgtgcaga aagccttaga gaagcaccgc    600

atgtacatgg gccagcggta tgtggaagta tatgagataa acaatgaaga tgtggatgcc    660

ttaatgaaga gcttgcaggt caaatcttcg cctgtggtaa atgatggtgt ggttcgtttg    720

agaggacttc cttatagttg caatgaggaa gacattgtag acttctttgc aggactgaat    780

atagttgaca ttacttttgt gatggactat agagggaggc gaaaaacagg ggaagcctat    840

gtgcaatttg aagaaccaga aatggccaac caagccctgt tgaaacacag ggaagaaatt    900

ggtaatcgat acatcgagat atttccaagc agaaggaatg aagttcgaac acatgtcggt    960
```

tcttataagg gaaagaaaat cgcatctttt cctactgcta agtatataac tgagccagaa 1020

atggtctttg aagaacatga agtaaatgag gatattcaac ccatgacagc ttttgaaagt 1080

gagaaggaaa tagaattgcc taaggaggtg ccagaaaagc ttccagaggc tgctgatttt 1140

ggaactacgt cttctctgca ttttgtccac atgagaggat tacctttcca agccaatgcc 1200

caagacatta taaacttttt tgctccactc aagcctgtta gaatcaccat ggaatacagc 1260

tccagtggga aggccactgg agaagctgat gtgcactttg agacccatga ggatgctgtt 1320

gcagcgatgc tcaaggatcg gtcccacgtt catcataggt atattgaact gttcctgaat 1380

tcatgtccaa aaggaaaata agactctagg ggctccagat aataagggtg aagcaagaag 1440

catttcattt gcacatcttt cttggacttg ggatatacag ttccagttta ttagcagcaa 1500

ctgctaggga aatgattttg gtgttttggg ttaattgctt ctaagaaaag tttcatagtg 1560

gactgtttag aagaagaaat gaaagatcca gtttgggatt atgaaataaa ccacaaatta 1620

aaatttttgt ttaaactgtc caggatctga tttaaaaata tggtctttgt tttatatgat 1680

taaatggttt gttttcatag atgatatgtt actcattgta aagaccacat attttattc 1740

agcagtgttc tttaaacgct ttcatttaaa aagtaacttt ttttttttgc ctgtgaattg 1800

agtgctctga tgtaaaactt ctcatggagt gaaacagtga tttattttaa ccaaacattc 1860

accaaagcaa agaacggttt cagacctttg aactggtatg gtttggcaga atagttttaa 1920

attttgctgt atttgattac ttagagatag gaatttttaa aaatcaaaac aaaaaatacc 1980

acagcttagt gtaaatgaca atttggcggt tttatgtctt tagaaatgtt ttgcctttct 2040

aagccttgtg ctaaaggcgt ataacggtgg tgcctatcta cttaaggggg cattctagtc 2100

ttaacttaaa agttgtctaa actgtccctc cctggctttt tttggtttgg ggtagaccta 2160

agggtgtttg ttagtctcaa aactgtgagg tgacatgtca gaacagtcca gactggtaag 2220

aaaattaatg gcttcacttg aatttaaacc agctctagat aggaaaaaaa tcagtctcct 2280

catttgcttt ttaaatggag tagtacatcc catattttag aacaagtagg ggtgccttgc 2340

ttaaataaaa atagcattta atgtataatt gtgtgaaggg tttatggata aagctgtact 2400

tctgtcacaa tgtggcagta ctttctgctt taatattaaa cagcttgtta tttaaatatt 2460

ggacaaaatg gctggcttca aaatatagtc attaataaac taactttatg tgcacctgtg 2520

taggagaatc aaaatcctgt atgctttctt tgccttgttc ctgttctcag ggtgacgact 2580

gccaccagga gatgcagttc tagttcttaa aattaaattt gcccaggttt ctgacaggtg 2640

atacctggaa gagagactat gtcttctctt acttaataca taaccatctt tgattaccag 2700

ctaagatgcg aaatcactgt actgtagtca ataaatgaag acttgtttca ggctgaagat　2760

t　2761

<210> 544

<211> 2445

<212> DNA

<213> Homo sapiens

<400> 544

gcataaaact atctgtagta atatgggtac attgtgggag tggccaagaa agctgtcgta　60

gacagtcaag gggcctttga ggagggagaa ttcgggggtg ttttggagct aaggactatg　120

tttccatcgg tatggcacat ctcgggagaa cattctgaag ccctttacta gagacaccct　180

ggacaggagg atatcctaat gattgttagt tggggaatca gtcccagagt gagtgaccag　240

caagttagag gccgacctgg gactaaggtc caggtccagc atgttttgat attctgcttt　300

cccttttatac cacaggatcc agtgctgcct ccttgtaccc tgtgctcaac tttctactct　360

acgtgcctga gcttgcacac tcaccgctgt acattcagga caaggatggc gctccagtgg　420

ccaccaatgc cttccatagt ccccgctggg gtggcattat ggtaatagtc acactacgca　480

gaccccagag cccatgcttc tgggacaggc aggtgtccct gaaactgtgt ccttctgtt　540

ttccttctgg tgtcctccat ggcccagcct gtgggagggg caggcaccag gaaggtgagg　600

gtgctatgtg ctcatgcccc tcttctgccg gccccacttt tgtttccgcc agtgttttct　660

atactgtgac cctttgccct tacctaggat cattctgtgt ccatcttaga tcttcgcctt　720

atttgtggga gtcttgcaag gttgggagcc ttgtctccct tgttagactg gaagtttctc　780

atgggggaga attctaaaat gggataagaa aaaaatatgt tctacaggac tttcaagggg　840

gtaattggga taatgtattt aatgctctcc gtagtaggta ctcaaaaaat attagctata　900

ccatgaggtt tatagcttct aaagagcaca gaatatgttt tccttttctc tccagagtgc　960

ctagggcaga gctgtgcaag ggcctggtat gacgttgtgg caatctcatt cccccctttca　1020

ggtatataat gttgactcca aaacctataa tgcctcagtg ctgccagtga gagtcgaggt　1080

ggacatggtg cgagtgatgg aggtgttcct ggcacagttg cggttgctct ttgggattgc　1140

```
tcagccccag ctgcctccaa aatgcctgct ttcagggcct acgagtgaag ggctaatgac   1200

ctgggagcta gacccgctgc tctgggctcg gtcagtggag aacctggcca cagccaccac   1260

cacccttacc tccctggcgc agcttctggg caagatcagc aacattgtca ttaaggacga   1320

cgtggcatct gaggtgtaca aggctgtagc tgccgtccag aagtcggcag aagagttggc   1380

gtctgggcac ctggcatctg cctttgtcgc cagccaggaa gctgtgacat cctctgagct   1440

tgccttcttt gacccgtcac tcctccacct cctttatttc cctgatgacc agaagtttgc   1500

catctacatc ccactcttcc tgcctatggc tgtgcccatc ctcctgtccc tggtcaagat   1560

cttcctggag acccgcaagt cctggagaaa gcctgagaag acagactgag cagggcagca   1620

cctccatagg aagccttcct ttctggccaa ggtgggcggt gttagattgt gaggcacgta   1680

catggggcct gccggaatga cttaaatatt tgtctccagt ctccactgtt ggctctccag   1740

caaccaaagt acaacactcc aagatgggtt catcttttct tcctttccca ttcacctggc   1800

tcaatcctcc tccaccacca ggggcctcaa aaggcacatc atccgggtct ccttatcttg   1860

tttgataagg ctgctgcctg tctccctctg tggcaaggac tgtttgttct tttgccccat   1920

ttctcaacat agcacacttg tgcactgaga ggagggagca ttatgggaaa gtccctgcct   1980

tccacacctc tctctagtcc ctgtgggaca gccctagccc ctgctgtcat gaaggggcca   2040

ggcattggtc acctgtggga ccttctccct cactcccctc cctcctagtt ggctttgtct   2100

gtcaggtgca gtctggcggg agtccaggag gcagcagctc aggacatggt gctgtgtgtg   2160

tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tgtcagaggt tccagagagt tccagatttg   2220

gaatcaaaca gtcctgaatt caaatccttg tttttgcact tattgtctgg agagctttgg   2280

ataaggtatt gaatctctct gagcctcagt ttttcatttg ttcaaatggc actgatgatg   2340

tctcccttac aagatggttg tgaggagtaa atgtgatcag catgtaaagt gtctggcgtg   2400

tagtaggctc ttaataaaca ctggctgaac atgaattgga atgat             2445
```

<210> 545

<211> 3092

<212> DNA

<213> Homo sapiens

<400> 545

```
gctgtggtgg ccccgagcgc gagtgtgtag gtgacaggac agcggccagg cccgcccctc    60

ccctcgtgat ggtcattgtc ctccagagca gtgatggagg aaataccagc ccaggaagca   120

gcagggtcac caagggtcca gtttcagtct ttggagaccc agtctgagtg tctgtcccca   180

gagcctcagt ttgtgcagga caccgacatg gaacagggac tcactggggg tctcagtggc   240

ccttagcagc agctccattc gtgtggccat gctggaggaa aatggggagt gcgtcctcat   300

ggaagggaag ctcacccaca agatcaacac tgagagttct ctctggagtc tcgagcccgg   360

gaagtgcgtt ttggtgaacc tgagcaaggt gggcgagtat tggtggaacg ccatcctgga   420

gggagaagag cccatcgaca ttgacaagat caacaaggag cgctccatgg ccaccgtgga   480

tgaggaggaa caggcggtgt tggacaggct tacctttgac taccaccaga agctgcaggg   540

caagccacag agccatgagc tgaaagtcca tgagatgctg aagaaggggt gggatgctga   600

aggttctccc ttccgaggcc agcgattcga ccctgccatg ttcaacatct ccccgggggc   660

tgtgcagttt taatgaccag aaggaaagga aaccctcgcc ggtggggagg cagagcctta   720

tcctcggctg cccttcttgg ctccctgcat tccagggact tgctcgtctt gtttaccccct   780

agccatcctt tctttcaagg gtgaaccagg ccttccaccc tgaccttgca tctccagact   840

gttccagaga aggtgcgggg ccagctgcta tgtggtggcc gctgtggctg acactgagtg   900

aaggtgtttg aaatgcagga gaggatatcc cagcaaattg ggatcacatg cttttgtctc   960

cacagcaacc agccactgca ggcagcatgt ctttcctccc ctgctctctg cttgctgttg  1020

ttttgacgct attctgcttg catgtcttct ggttgggatg tggagttgtt gctggactct  1080

caggcgaagc tgaagtcatt gaagtgtgtg aagctctgtg cttgcatgag ggcaagcaag  1140

gaatggctgt gcctgaggct gctctgggaa actccttgcc ccttgacctc ttttgagagc  1200

attcacgtgg tcttcttgct catcccctta taaatgtgct ttgcctgcct cagcctcatg  1260

gtcagagcag tggagactgg agccctgttt gcacgttctg gttgttcgga gaaagcctag  1320

gttctgggct caggtccaga tgcagcgggg attctgttct ctgactgtgg cgaccttgct  1380

ttggttcttg ttgaagtgaa ccaagcccgg ccaccacgca tggcatgctg tgcttggctc  1440

cccataagac gtcctctttg ggtgcacggt gtcaaagtgt gggcaggagt ggagagctgg  1500

tgccctcagg aggagaccac agcatgtcca tcagctcagc agagctcgac agccacaagt  1560

cctgagaagc tttgaccttg aagggcttct gggagaggag gaatttctgc atggggcgtg  1620

aaggcacact gtcccaccac aactgaacca gaagagagtg aagactcccc tcttcccatc  1680
```

```
ctctgtgcca ggtgccagac tgtgctcctt ggaacttatg gcccaatctt acctgttctc   1740

cagggactgg tcactgcctc aggacccccа agcctatgcc ctgagccatg gctgctgact   1800

gactccagcc aaggtgcaaa gacgagatta tgagacaggt cctcaggcct gtgttccaag   1860

tactcacagg ggctctgggt gcccatcgcc gggagtatgg ttcagctgcc accggcactg   1920

tccatttgcc tgtctgtcaa gctcagagca tggataagcc acacagcagg gcagtgcacc   1980

ctggcaccat gcacggccag caagaatcaa ggcccgcaga tgctaagaga gcctattgtc   2040

aggggaaggt ccccgctcct gcacactctc tgtggatact tgggttgtgg gggctctctt   2100

ggagagtaag tttgtggttt gtttctggtt tacagtggtg gctgacaccc cttgtaagaa   2160

agcattcctg ggaagtcttc tgtgggtcca aacatgttgc tccgatcatc acaggagagc   2220

aaaaggccct agatacccсc tttggaatgt gagagtcttg ttgtctgata tttgccactg   2280

agctggtgaa gcccctctaa agagatctcg accctgggga gcagaattct tgtcatctat   2340

gaggggtcct gagaaagact tgtcattttt tttcctggag ttcttcccat tgaggtccta   2400

ggatttgcac accactgtcc cacaagagct ttcctgccta atgaaaggag gtcttgtggt   2460

gtgtgtctcc tctcttctct atagttcccg agttggcccc cattgcagcc cccaccctgt   2520

gggtagtctt ccagaagtga tgcagtggtg tgagatgccc tacaccttgt tatttgggag   2580

actttgagag tcattcactt ccatggtgac tagtgtttgt tttgcctgat tttatattct   2640

gtgttgcatt tctccccact ccctgccctg ctttaataaa cagcaaacca atatctagga   2700

agaatgactg agggatagta ttgggtattg gccccatggc aggaacagcc acttgcatct   2760

ggtcccggtg ccacactgcg gtgcttggtg tggttgtgga gcctgtccct gcgcgccttg   2820

ctcccgttga gccacgctgt ctggtgggtg attctctgcc ctgagccacc accctggact   2880

ggcccagtct ccagagctgg cacaccctgc ctgtttttctc tttttagaca caacagccgc   2940

agtttggcca gccactaagt cccaccagct gaggtccgag gaaagcgggg tgactcattt   3000

cccttgtcca gggcccgagg agagtgaggt gtccagcctg caaagctatt ccagctccta   3060

ggtgttggtt tgcaataaat tggtatttaa gc                                  3092
```

<210> 546

<211> 2533

<212> DNA

<213> Homo sapiens

<400> 546

```
tgtagatctc aattagctat acaggattat aaaaagctag tcaggaaaaa tttcctattg    60

ctgtaacagg ttgtggatga ccttgtactt gtattttcac cagagggcac agtggtttta   120

gacagttgcc atctctacta aaaggtgact caggcctttt ccactgaaga cacagaactg   180

tttgtaatcc catagactct catgtgtctt gcctgttttt gttttttgaat gtggctctgt   240

tgtccacgct agagtacagt ggtgcaatct cagctcactg caacctctgc ctcccaggtt   300

caagccatct tcccacctca gtctcctgaa tagctgggac tacaggcgta taccaccata   360

cccagataat ctttgtattt tttggtagag gcagggtttt gccatgttgc ccaggctgat   420

ctcaaactct tggtctcaag cattctgcct gcctcggcct cccaaatgct gggattacag   480

gtgtgagcca ccatgcctga ctgtcatctg gcctctgttc aatgttttcg accaggaacc   540

ttcctctgcc ccctctagga agccttcctg acacccagtg ccggattagg tacccctcct   600

gtgtattctg cagtttctga ttggctcatc atggcgtctg taaatgttga tgactttgc    660

ttctccatag accctgccca acatctctga cctgtgtttg agagatgtgc ccccagtccc   720

taccctggct gacatcgcct ggattgctgc ggatgaagag gagacatatg cccgggtcag   780

gtagttgagg cagtagctgg tctgctaagg aatggagaac ttcccagaag aggtggcagg   840

cagcaaggag agaggaatga gaactgtggg ctcagagagg agcagaacct tactatacta   900

ctctcacaga agtgggggaa ggaaccttag gagcacagtg gcctgctgtc tctaactgat   960

ctacttggtt ttccctggtc caggagtgat acgcgccccc tgaggcacac ctggaaaccc  1020

agccctctga ttgtcatgca gcgcaatgcc tctgttccca acctgcgtgg gtccgaggag  1080

aggcttctgg ccctgaagaa gccagctctg ccagccctaa gccgcactac tgagctgcag  1140

gacgagctga gccacttgcg cagccagatt gcaaagatag tggcagctga tgcagcttcg  1200

gcttcattaa cgccagattt cttatctcca ggaagttcaa atgtctcttc tcccttacct  1260

tgttttggat cctcattcca ctctacaact tcctttgtca ttagtgacat caccgaggag  1320

acagaggtgg aggtccctga gcttccatca gtccccctgc tttgttctgc cagccctgaa  1380

tgttgcaaac cagaacacaa agctgcctgc agttcgtctg aagaggatga ctgcgtctct  1440

ttgtccaagg ccagcagctt tgcagacatg atgggtatcc tgaaggactt tcaccgaatg  1500

aaacagagtc aagatctgaa ccggagttta ttgaaggagg aagaccctgc tgtgcttatc  1560
```

```
tctgaggtcc taaggaggaa gtttgctcta aaggaagaag atatcagtag aaaaggaaat  1620
tgacaaccct cagctctgca aactcagtct catgctcctg gaataccttc aatagctgcc  1680
ttcctcaccg cagatgtttc tgcctcttaa ggatagatct tctgcaacag tcttgctgac  1740
aagctagagc ttggactgaa agagaagagc tggattatat atttcccaga cttcaaaccc  1800
tagcagaagc taaggcttgt gatttgacct gagacatttg tttcaggtaa tcgtgtagaa  1860
tgaagtatct tagtttaaag ggtaagagag aagttgtttc tggttttttcc ttgcccctgt  1920
gtgaaaatag gtcctaaatg actgacttca ctgcattaga ccctatagct ggtctcacaa  1980
gacactttgt gcccagctgt cactcactct cagcagcttc cttgcagcag agcagggctg  2040
aggggaaggg gctatgaatg tttgtatacg tgttcacagg gcacggaaaa tcttatgctg  2100
ctccgtcata aacctacacc aatgcccagc aatcaccctc ctcacttcct tgtctagatg  2160
tagaggtcag gctgctgaac cagccaacac atgggctact gctgggaagc ctgggctgtt  2220
tttttctta aacacatttt atattactga acaaccaaat ctaccctcca cggccctgag  2280
gccttatcag ttccactgat taaaaacttt ctcttccacg gactttaagc ccggtaggaa  2340
agagagagga ggagggggaa agagcaaacc atctttcttc caggcccttg actgctcctt  2400
tgggctgggc caaggtttgt atgtaccaca ccatgcatga ctcagatgcc ctcaggtccc  2460
tttctctatg gtatgtatac tgcttgtgtt tgggctgaag cactacctga cattaaagga  2520
aggacttgga gag                                                     2533
```

```
<210> 547
<211> 1781
<212> DNA
<213> Homo sapiens

<400> 547
agtaataata gtacaagttt agcatctata attggaatca gagcaaaagt gccaatatag   60
gagttaatgt ctctttcttg gtgtagtcca aacgtaaaca ctattgggcc aatatggcag  120
ctcccctgtc ctagggactt gggtctgtct tgtcgctctc ttctcctgaa tgtgcagctt  180
tcttctcatt ataaatggct gtcccagctc tcagcagtga cacatgactt gggtattggc  240
```

```
acataccatt tctacatctg cccattgacc agaatctagt cccgtggcca tccaagttgc    300

aggagaagct gggacattca tcttagccca gcagccgatg tctgtctcta ttactgtaaa    360

tgaagtaaag aatggatcag gaggggacaa ctatgaatct ttgtgatacc tactatgttt    420

cagtcactgt gctaagtgct agggatatag agataagtaa agactgaatc tggtggagaa    480

ctgagtttag aatgaggact tggggtagat ccctgttgtc tgaagatacc cttcttcgta    540

tacactatag aaacacaatt tgttctgtgt atattctata tgtaaccttc tgtgcttttg    600

catcttctgc ccattgcctg ggatcctttc tccctcgcac tttccactga atgcaattcc    660

gtccattctg caaggccagc ccaagtgtcc tcatctttgt gaaggctcta tttttccttc    720

cagggatcgt taggagttgt tcccttggcg ttcccattgc tctgaaacac tgtgttctct    780

ttcctctgtt ttttgagatg gagtttccgt ctgtcaccca ggctggagtg cagtggcatg    840

atctcggctc actgcggcct ctgcctctcg ggttcgagcg ttctccttc ctcagcctcc    900

cgagtagctg ggattgcaga catgtgccac cctgcccagc agattttgt gtttttagta    960

gagacgaggt ttcgtcatgt tggtcaggct ggtctcagac ttctgacctc aggtgatctg   1020

cccacctggg cctcccaaag tgctgggatt ataggcgtga gccaccccgc ccagcctcct   1080

cagttcttat atgtgcctag aggaatacat ggattgtatt ttattcattt catatcccca   1140

gcaccttagc acagcactga gcaaacagaa ggtgctctat aaatgtttgc cgaatcaaat   1200

tagttagtgc ttggaatcct tttgtggatt cttgaatgac aaggtgggtg gaatatctaa   1260

tgaatggggg aatctctctc atattgtgta taaaaatatc atagttaata aaatgttaag   1320

tgaattccaa atcaaattca gaatcataga ggggatagat catttcccca gtgttttcat   1380

cttattctaa ctttaagcta aattttatt ctttattcag ttattctagt aaaaatgtgg   1440

tgatagaggt gatgaagggg ccttaagaaa aaacttgagg ccgggcacgg tggctcacgc   1500

ctgtaatccc agcactttgg gaggccgagg cgggcggatc acgaggactg gagtttgaga   1560

ccagacttcc taccgtggtg aaaccccatc tctactaaaa atacaaaaat ttagccaggc   1620

tggtagcggg cacctgtaat cccagctact caggagcctg aggagggaga atcgcttgag   1680

cccgggaggt ggaggttgca gtgagctgag atcgtgccac tgcactcgag cctgggtgac   1740

aagagcgaaa ctctgtgtca aaaacaaaca aacaagcaaa c                       1781
```

<210> 548

<211> 2124

<212> DNA

<213> Homo sapiens

<400> 548

```
agtgcgcggg ctgacactca ttcagccggg gaaggtgagg cgagtagagg ctggtgcgga      60

acttgccgcc cccagcagcg ccggcgggct aagcccaggg ccgggcagac aaaagaggcc     120

gcccgcgtag gaaggcacgg ccggcggcgg cggagcgcag cgatggccga gctgcgcgag     180

gcgctcgtgt ccgtgtggct gcagtgcacc gccatcagca ggatttacac ggtggggcgc     240

agcttcgagg gccgggagct cctggtcatc gagctgtccg acaaccctgg cgtccatgag     300

cctggtgagc ctgaatttaa atacattggg aatatgcatg ggaatgaggc tgttggacga     360

gaactgctca ttttcttggc ccagtaccta tgcaacgaat accagaaggg gaacgagaca     420

attgtcaacc tgatccacag tacccgcatt cacatcatgc cttccctgaa cccagatggc     480

tttgagaagg cagcgtctca gcctggtgaa ctcaaggact ggtttgtggg tcgaagcaat     540

gcccagggaa tagatctgaa ccggaacttt ccagacctgg ataggatagt gtacgtgaat     600

gagaaagaag gtggtccaaa taatcatctg ttgaaaaata tgaagaaaat tgtggatcaa     660

aacacaaagc ttgctcctga gaccaaggct gtcattcatt ggattatgga tattcctttt     720

gtgctttctg ccaatctcca tggaggagac cttgtggcca attatccata tgatgagacg     780

cggagtggta gtgctcatga atacagctcc tccccagatg acgccatttt ccaaagcttg     840

gcccgggcat actcttcttt caacccggcc atgtctgacc ccaatcggcc accatgtcgc     900

aagaatgatg atgacagcag ctttgtagat ggaaccacca cggtggtgc ttggtacagc     960

gtacctggag ggatgcaaga cttcaattac cttagcagca actgttttga gatcaccgtg    1020

gagcttagct gtgagaagtt cccacctgaa gagactctga agacctactg ggaggataac    1080

aaaaactccc tcattagcta ccttgagcag atacaccgag gagttaaagg atttgtccga    1140

gaccttcaag gtaacccaat tgcgaatgcc accatctccg tggaaggaat agaccacgat    1200

gttacatccg caaaggatgg tgattactgg agattgctta tacctggaaa ctataaactt    1260

acagcctcag ctccaggcta tctggcaata acaaagaaag tggcagttcc ttacagccct    1320

gctgctgggg ttgattttga actggagtca ttttctgaaa ggaaagaaga ggagaaggaa    1380

gaattgatgg aatggtggaa aatgatgtca gaaactttaa atttttaaaa aggcttctag    1440
```

ttagctgctt taaatctatc tatataatgt agtatgatgt aatgtggtct tttttttaga 1500

ttttgtgcag ttaatactta acattgattt attttttaat catttaaata ttaatcaact 1560

ttccttaaaa taaatagcct cttaggtaaa aatataagaa cttgatatat ttcattctct 1620

tatatagtat tcattttcct acctatatta cacaaaaaag tatagaaaag atttaagtaa 1680

ttttgccatc ctaggcttaa atgcaatatt cctggtatta tttacaatgc agaatttttt 1740

gagtaattct agctttcaaa aattagtgaa gttcttttac tgtaattggt gacaatgtca 1800

cataatgaat gctattgaaa aggttaacag atacagctcg gagttgtgag cactctactg 1860

caagacttaa atagttcagt ataaattgtc gtttttttct tgtgctgact aactataagc 1920

atgatcttgt taatgcattt ttgatgggaa gaaaaggtac atgtttacaa agaggtttta 1980

tgaaaagaat aaaaattgac ttcttgcttg tacatatagg agcaatacta ttatattatg 2040

tagtccgtta acactactta aaagtttagg gttttctctt ggttgtagag tggcccagaa 2100

ttgcattctg aatgaataaa ggtt 2124

<210> 549

<211> 1951

<212> DNA

<213> Homo sapiens

<400> 549

agcatctccg agggccacct ctctggcctg ggccggggcc gaagcggggt cggctgcgca 60

agaggcggca actttggctt atactgactc agcccagcgc cccctttta tcccacataa 120

aaatggagaa atggcctccg ggaggaagat gtgaagcggc acgctctatc tctactgatc 180

ttcactcaaa agcagccgca ggagctgttg ctatctcgct gtggtgcagc gctttccct 240

cctccctcac tttcccacat gcccagaggc aaagtgtctg gccgacgtct gaggagtgaa 300

gaagccactg ggagccactc cctctcactc accgaactat gggagtaaag aagctgcaac 360

atttctggag gctcgtccag gtcttcagaa ggatgggtaa caaactattt tcagcctgca 420

ctcctctaga gtgcatcctg aatcactggg aatcctttga cctgcagatt ctgaagagaa 480

aatgctgtat attcctttgc acaagggctt ggccaggtta taagcagcag gatggagaag 540

cctggcctct ggagggaagt atcaactttta atgctaacct gcagctggac cgtttctgta 600

aacatggagg caaatggtct gaggtctcat acatgcaggt tttctttgcc ttgcaggata 660

atctggacct ttgctgatat tgtaggatag atccagcctg cctagcagtc atctcaggag 720

aggctgcaaa ggacagtccc agggaagtaa accccaggga agtaaattcc agggaagtaa 780

accccagagg tgcctccagc agggggatca gacccctcca gtcctactcc tggtccatca 840

tgtcctccct atccaggttc tctctcaagc ttgtcctctc ctaggaatcc tcgtttcagg 900

caggtcccag cctcactcat ggccctacaa gagatgcctt gtgaatatgg ccccattaag 960

gtatagacgt gtttactcat gtcttttttc tacaggactt aagacaaatt aggggggatc 1020

ttggtaagtt ttcagatgac cctgaagggt atacagaggc tttccagaat ttaaaccaag 1080

tatttgaact ctcctggaag gatgttatgt tactttgaa tcaaactttg gctaccactg 1140

agaagcaaac agccctgcaa gcagcagaga agtttgtgga tgagctttgt atctcataca 1200

gtgccaagaa agggagagga tatgcaagaa aaagacagaa aaatctattg gccaccctgc 1260

aggcttacaa accccagaat cccaaagatg cacctgttaa ctgcgacaaa tgtggcaaac 1320

cagggaatgt taaaaacgac tgcccaggca gcatgaggaa gccagctcga ccctgtccaa 1380

tctgtggtgg ggaccactgg agggtggact gtccccagag atgcaggtca ctgggtccaa 1440

agccagtctc acaagtgtct aacaggattg atgggcccca gggctcctgt ccctggctct 1500

gacagctcag actgccatta ccatccagga gccctgaatg attctggagg tcaaagggag 1560

gaaggtgaac ttcttcctgg atagcagagc agccatttct attctcctct ccaatccagg 1620

cctccctcct tcccttagca tgaccatgaa gggtgtctca ggaaagcttt taacctgata 1680

tttttccaac cccttagttg tagttgggga gacctcgttt ttactcatgt cttttttaatc 1740

atgcccgaaa gcccaattcc tctgggaggc agggatagtt tagcttatat gtgaaccacc 1800

atccttatgg ctccaggaca cactccttgc ctccccctgg tggagactga tatcaatcca 1860

gaaatttggg caattcaagg gaaaattggc tgagccacaa ccaccatact gatctggatc 1920

caccttaagg atcccacctc cttccctaac c 1951

<210> 550

<211> 2435

<212> DNA

<213> Homo sapiens

<400> 550

```
agcatcacca ggagggcttg ttagaacact atttgtgacc cgtcttggta acatagtgaa    60
acctggtctc tacaaaacaa aacaaacaaa aaacactatt tgctaggctc caccccagaa   120
ttgctgattc agtaggtcta ggcagggcct gagaatttat gtttatttct ctttctttct   180
ttcttttttt tttttgggga cagtcttgct ctgtcaccca ggccggagtg ccggagtgca   240
atggcacgat ctcggctcac tgcaacctct gcctcttggg ttcgggcgat tctcatggct   300
cagccacctg agtggctggg actgcaggtg tgtgccacca cgcctggcta attttgtag    360
tttagttaga acggggttt cgccatgttg ccgggttgg tcttgaattc ctgacctcag    420
gtgagctgcc caccttggcc tcccaaagtg ttgggattgc aggcgtgagc caccacaccc   480
agcaaaattt ctaacaagct ctcaaatgat gctgatgttg ctggttgggg tggaggtggg   540
gcataccttg agagccacta gattagacca ggggttggcg tattatggca gggccagtca   600
ctgtgtttta taaaattcta ttggtacata gtttctgctg tctctttaaa tattgtctgt   660
ggctgttttt ggcagagttg agcattagag acagattaca tgggccccaa acttaaaata   720
tttactgttt gaccatttta agaaaaagtt tatttaacct tatccccttt ttctttctct   780
ctctctctct ctctttcctt ccttccttcc ttccttcctt cttttttttt tctgagacgg   840
agtcttactc tgtgcccagg ctagagtgca gtggcatgat ctcggctcac tgcaacctcc   900
acctcccggg ttcaagcgat tctcctgcct cagcctctca agtagctggg attacaggcc   960
ggctgcctac cctccagact gtccgctatg gctccaaggc tgttacccgc caccgtcgcg  1020
tgatgcactt tcagcggcag aagctgatgg ctgtgactga atatatcccc ccgaaaccag  1080
ccatccaccc atcatgcctg ccatctcctc ccagcccccc acaggaggag ataggcctca  1140
tcaggcttct ccgccgggag atagcagcag ttttccagga caaccgaatg atagccgtct  1200
gccagaatgt ggctctgagt gcagaggaca agcttcttat gcgacaccag ctgcggaaac  1260
acaagatcct gatgaaggtc ttccccaacc aggtcctgaa gcccttcctg gaggattcca  1320
agtaccaaaa tctgctgccc cttttgtgg ggcacaacat gctgctggtc agtgaagagc  1380
ccaaggtcaa ggagatggta cggatcttaa ggactgtgcc attcctgccg ctgctaggtg  1440
gctgcattga tgacaccatc ctcagcaggc agggctttat caactactcc aagctcccca  1500
gcctgcccct ggtgcagggg gagcttgtag gaggcctcac ctgcctcaca gcccagaccc  1560
```

```
actccctgct ccagcaccag cccctccagc tgaccaccct gttggaccag tacatcagag   1620

agcaacgcga gaaggattct gtcatgtcgg ccaatgggaa gccagatcct gacactgttc   1680

cggactcgta gccagcctgt ttagccagcc ctgcgcataa atacactctg cgttattggc   1740

tgtgctctcc tcaatgggac atgtggaaga acttggggtc gaggagtgtg tttgtcactt   1800

ggttttcact agtaatgata ttgtcaggta tagggccact tggagatgca gaggattcca   1860

tttcagatgt cagtcaccgg cttcgtcctt agttttccca acttgggacg tgataggagc   1920

aaagtctctc cattctccag gtccaaggca gagatcctga aaagataggg ctattgtccc   1980

ctgcctcctt ggtcactgcc tcttgctgca cgggctcctg agcccacccc cttggggcac   2040

aacctgccac tgccacagta gctcaaccaa gcagttgtgc tgagaatggc acctggtgag   2100

agcctgctgt gtgccaggct ttgtgctgag tgctgtacat gtattagttc ctttactgct   2160

gaccacattg tacccatttc acagagaagg agcagagaaa ttaagtggct tgctcaaggt   2220

catgcagtta gtaagtggca gaacagggac ttgaaccaag ccctctgctc tgaagaccgc   2280

gtcctgaatt tcttcactag agcttcctca tcaggttacc cagaagtggg tcccatccac   2340

catccaggtg tgcttggatg ttagttctcc accctcgagg tgtacgctgt gaaaagtttg   2400

ggagcactgc tttataataa aatgaaatat attct                             2435
```

<210> 551

<211> 3342

<212> DNA

<213> Homo sapiens

<400> 551

```
actgcaccgg gaccagcgcc tccccgcttc gcgctgccct cggcctcgcc ccgggcccgg     60

gtggatgagc cgcgcgcccg ggggacatgg aagcgctgac gctgtggctt ctcccctgga    120

tatgccagtg cgtgtcggtg cgggccgact ccatcatcca catcggtgcc atcttcgagg    180

agaacgcggc caaggacgac agggtgttcc agttggcggt atccgacctg agcctcaacg    240

atgacatcct gcagagcgag aagatcacct actccatcaa ggtcatcgag gccaacaacc    300

cattccaggc tgtgcaggaa gcctgtgacc tcatgaccca ggggattttg gccttggtca    360
```

cgtccactgg ctgtgcatct gccaatgccc tgcagtccct cacggatgcc atgcacatcc　420

cacacctctt tgtccagcgc aacccgggag ggtcgccacg caccgcatgc cacctgaacc　480

ccagccccga tggtgaggcc tacacactgg cttcgagacc acccgtccgc ctcaatgatg　540

tcatgctcag gctggtgacg gagctgcgct ggcagaagtt cgtcatgttc tacgacagcg　600

agtatgatat ccgtgggctt caaagctttc tggaccaggc ctcgcggctg ggccttgacg　660

tctctttaca aaaggtggac aagaacatta gccacgtatt caccagcctc ttcaccacga　720

tgaagacaga ggagctgaat cgctaccggg acacgcttcg ccgcgccatc ctgctgctca　780

gcccacaggg agcccactcc ttcatcaacg aggccgtgga gaccaacctg gcttccaagg　840

acagccactg ggtctttgtg aatgaggaaa tcagtgaccc ggagatcctg gatctggtcc　900

atagtgccct tggaaggatg accgtggtcc ggcaaatctt tccgtctgca aaggacaatc　960

agaaatgcac gaggaacaac caccgcatct cctccctgct ctgcgacccc caggaaggct　1020

acctccagat gctgcagatc tccaacctct atctgtatga cagtgttctg atgctggcca　1080

acgcctttca caggaagctg gaggaccgga agtggcatag catggcgagc ctcaactgca　1140

tacgaaaatc cactaagcca tggaatggtg ggaggtccat gctggatacc atcaaaaagg　1200

gccacatcac tggcctcact gggggtgatgg agtttcggga ggacagttcg aatccctatg　1260

tccagtttga aatccttggc actacctata gtgagacttt tggcaaagac atgcgcaagt　1320

tggcgacatg ggactcagag aagggcttga atggcagctt gcaagagagg cccatgggca　1380

gccgcctcca aggattgact cttaaagtgg tgactgtctt ggaagagcct ttcgtgatgg　1440

tggctgagaa catcctagga cagcccaagc gctacaaagg gttctccata gatgtcctgg　1500

atgcactggc caaggctctg ggctttaaat atgagattta ccaagccccct gatggcaggt　1560

acggtcacca gctccataac acctcctgga cgggatgat cggggagctc atcagcaaga　1620

gagcagactt ggccatctct gccatcacca tcaccccaga gagggagagc gttgtggact　1680

tcagcaagcg gtacatggac tattcagtgg ggattctaat taagaagccc gaggagaaaa　1740

tcagcatctt ctccctcttt gctccatttg atttcgctgt gtgggcctgc attgcagcag　1800

ccatccctgt ggttggtgtg ctgatatttg tgttgaacag gatacaggct gtgagggctc　1860

agagtgctgc ccagcccagg ccgtcagctt ctgccactct gcacagcgcc atctggattg　1920

tctatggagc cttcgtacag caaggtggcg aatcttccgt gaactccatg gccatgcgca　1980

tcgtgatggg cagctggtgg ctcttcacgc tcattgtgtg ctcctcctac acagccaacc　2040

ttgctgcctt cctcacagtg tccaggatgg acaaccccat aaggactttc caggacctgt　2100

```
ccaaacaagt ggaaatgtct tatggcactg tccgggattc tgctgtatat gagtacttcc   2160

gagccaaggg caccaacccc ctggagcagg acagcacgtt tgctgaactc tggcggacca   2220

tcagcaagaa cggaggggct gacaactgcg tgtccagtcc ttcagaaggc atcaggaagg   2280

caaagaaggg gaactacgcc ttcctgtggg atgtggccgt ggtggaatac gcagccctga   2340

cggatgacga ctgctcggtg actgtcatcg gcaacagcat cagcagcaag ggttacggga   2400

ttgccctgca gcatggcagc ccctacaggg acctcttctc ccagaggatc ctggagctgc   2460

aggacacagg ggacctggat gtgctgaagc agaagtggtg gccgcacatg ggccgctgtg   2520

acctcaccag ccatgccagc gcccaggccg acggcaaatc cctcaagctg cacagcttcg   2580

ccggggtctt ctgcatcctg gccattggcc tgctcctggc ctgcctggtg gctgccctgg   2640

agttgtggtg gaacagcaac cggtgccacc aggagacccc caaggaggac aaagaagtga   2700

acttggagca ggtccaccgg cgcatgaaca gcctcatgga tgaagacatt gctcacaagc   2760

agatttcccc agcgtcgatt gagctctcgg ccctggagat gggggggcctg gctcccaccc   2820

agaccttgga gccgacacgg gagtaccaga cacccagct ctcggtcagc acctttctgc   2880

cagagcagag cagccatggc accagccgga cactctcatc agggcccagc agcaacctgc   2940

cgctgccgct gagcagctcg gcgaccatgc cctccatgca gtgcaaacac aggtcaccca   3000

acgggggggct gttccggcag agcccggtga agaccccat ccccatgtcc ttccagcccg   3060

tgcctggagg cgtccttcca gaggctctgg acacctccca cgggacctcc atctgactgc   3120

gccgcctgcc ctcctgccca ccctcccacc cacccgacca gcagagcttt ttaatacaag   3180

aaaacaacaa cacaaaccac acacactcgc acacacacac atacacagag actctttcat   3240

ttttcttgta catatgtgta aataatgaca gaatggagtg gggtaaaagt gtattttgaa   3300

tattcccaat tttcgaggtc agtaaaaaaa cacaaaaact gt                       3342
```

```
<210> 552

<211> 2670

<212> DNA

<213> Homo sapiens


<400> 552
```

gttgcgccgt tgctatggta accgaggagg ccgggggcccg ggtgtggtat ttttggagtt 60

aatggagtca gaaggacctc cagagtcaga gagttcagaa tttttctcac agcaagaaga 120

ggaaaatgaa gaagaagaag cccaagaacc agaggaaaca ggccctaaga accccctttt 180

acaacctgct ctcacagggg atgtagaggg tttgcagaag atatttgagg atcctgagaa 240

tcctcatcat gaacaggcca tgcagcttct cttagaagaa gacatcgttg ggagaaattt 300

gttgtatgca gcttgcatgg ctgggcaaag tgacgtgatt agagctttgg caaaatatgg 360

tgtgaatctg aatgaaaaaa ccaccagagg gtacacactc ttacattgtg ctgcagcctg 420

gggtcgtttg gaaactttga aagcactggt agaactggat gttgatatag aagctttgaa 480

cttccgggaa gaaagggctc gagatgttgc tgctagatat tctcagactg agtgtgttga 540

attcctggac tgggcagatg caaggctgac tctgaaaaaa tatattgcaa aagtctcttt 600

agctgttact gacacagaaa agggatcagg gaaactcctt aaggaagaca agaataccat 660

cctcagtgca tgccgtgcaa aaaatgagtg gttggaaacc catacagaag cttccattaa 720

tgagcttttt gagcagagac aacaactgga agatattgtg actcctatct tcacaaaaat 780

gactacacca tgtcaagtga aaagtgccaa atctgtaaca agccatgacc agaagagaag 840

tcaagatgat acctccaact gaacatacgt tctgtaaaag gccacatttt cttttagtat 900

ctgaaaggca aacctattca tgccatttga aatcgagaaa acagatgtgg gtttctttaa 960

gtatttaagt acaacattac atcgcccttg ttttgtttga cctgttcagc atgcttatgt 1020

ccggactctg gcctcgcctc tgctcctcca agcacagccc catgtgagtt tcacgtgctc 1080

cttcaggaaa gcacttgggt ataaatcatt cgtgaagacc atgtggaggc tttaagaact 1140

actcagagaa tctaataatt ttctgtgtaa ttgaggcatt ccatataaaa ggacatattt 1200

ggctatttcc agagaaaaaa tttgttctcc ctgcctaaaa aggaaatctt atggaatgac 1260

acttggagca aggaaatatt aagaccagct tggattagga gcctctgggt acaactatca 1320

cttttatgt ccaaaattaa atttcacctg tgaggtgggg tatacctctg agtaaaaccc 1380

ctctttatct ttgacctcct tctatctgta aattaataaa cacaaatctg tatagttttta 1440

tacttagaag agttctccta ttctgtaagg ctggcaatac agatattgta actggactga 1500

agaccatttc ccctcccatt ctgtttata tttcctaggt tttaagtacg atagttggtt 1560

tcatattggt ggtttggaaa gcctttttc taatttattt aatcaggcgc ctcaaccttc 1620

tcttacgttg tgactttatg gaaaagtttt atagaaaaga agatggtttt taaaaagcac 1680

ttattgttcg ttcttatggc tttctcttct ttgtcctgtt ctgaaagcta gttttccctt 1740

```
atggggagaa ggaaaaggaa tgggtaattc agtaatactt tgtcagttga catttattta  1800
accatggttt tgagataacc ctgttttaaa tgtctcccaa agtttttagt tttttatcct  1860
tttaatgtat gagcaattca gtttcaattt tttaaagcaa aagaacactg caataacttt  1920
cagccacctt tttggccgac ccagtgggtg tttatggagc agtacaaaga agacctgtgt  1980
ttgctccttt tttttttttac cctccttctc ccttctccct tttcccttcc cttcccttc   2040
tccttcctct cccttcctct cccttcccct cccttccct cccttcccct cccttcctct   2100
cccttcctct ccctcccct cccttcctct ccctcccct cccttcctct ccctcccct    2160
cccctcctc ttctctctcc tcctcctctt ccctctccaa ctccttcttc tccctctctt   2220
atctctctct ctctctccac ccccgcaacc ttcttgacag ggtctgcctc tcctgcccag   2280
gctggaatgc agtggagtta tcatgatcat agctcactgt aacctgtaac tcctgcactc   2340
aagtgatcct cccaccatgc ttgggtaatt gaaaaaataa acatttgcag gctgggtgct   2400
ggctcacacc tgtaatccaa gaactttggg aggccaaggc aggcggatca cctgaggtca   2460
gcggtttgag acaagcctgg ccaacatggt gaaaccctgt ctctactaaa aatacaaaaa   2520
tttagctgta tgtggtggca cgtgcctgta atcccagtga cttgggaggc tgaggcagga   2580
gaatcacctg ggcccgggag gtggaggttg cagtgagccg agatcgcacc actgcattcc   2640
agcctgggtg acagagtgag actccatctc                                   2670
```

<210> 553

<211> 1759

<212> DNA

<213> Homo sapiens

<400> 553

```
ggcctttttt tttttttttt tagtagagac gtggtctctc tatgttgtcc aggcttgtct   60
tgagctcctg ggctcaggtg atcttcccac ttcgacctct caaagtgctg ggattacaga  120
tgtgagccac tacacttagc cagattttac ttttttaaaa aaatacgtag aataatccag  180
taatggtagc agaagctcag cactcattga gccctctctg gatgtggctc tacgtcgtgt  240
gttggagtct agtcccttct ctgtctcctt tgctggaact tcttggactc tttaaatatt  300
```

```
ccctttcgca gggtcgaggg ccctggcctc aactctcttc tctgctctgt gtcactcact   360
tctccagtga ccttgaccag ccccaaggtt ttaaatgagt tctagaccag cactgcctga   420
tggaactttc tacagtgatg gaaatgttcg tatctgcatg ccccatgtgg cagccactag   480
ccacccaagg ctatggagca ccagaagtgt ggctaatgca actgggaaaa aaaagtttta   540
atcgtattca attttaatta attttaacgt aaatagctgc atgtgcccta gcagctagga   600
gctactacag cagctagaca acacatctaa acaatgagtc ccaagtttac acccacatca   660
gagacacatc ctctgaactc tgacttttgt aggcaaaggc ttgcacgaca ctgcggccaa   720
agtgttccac tgacatctct gtcccagcat gtccaaaaca gaagttgtga tttctcctcc   780
acctccaagc accccatccc catcttggat gcaggctgtt gccaaagtta agttcccagg   840
actcatggct gtctctgctc cttccctctc accccacacc ccacactcag ccagtcccgt   900
ggctcaacca atacagccac tgctcaccgc cctcaatgcc agcctcaggt cacgccacac   960
tgtctttctt gtggacacca caggaatcca ccccacacac acacttactc ttctctccct   1020
ccaccctcac cgtcttgttg tccattctcc ccacatcccc cagactcatg ccttaaaaat   1080
gtggatcagg tcatcccccg gctcataacc cccacagagc ttccatcaca tttacgatga   1140
aattcgccct cctcacccct gctcaccgtg ggacctcact ccctcctcca tttcctcctt   1200
agcgcttctc caatgcccag tgagtcattt ccttgttagt gtcttatccc tgccggcatc   1260
taagccccat gagggttctg ctgctttggc gctgtgtcac cagcccccag cacagtactg   1320
accatggaac gactccacag ctctctgggc tcacattgga tgatgacctc tttcagcttc   1380
atctctattg tctcctttaa ccctcagaca cccctgtgat gtggttactt ttactggccc   1440
catgcacaag tgagaaactg agtctggggc gggttaccca gctgtgatga atatctggta   1500
aatgtttact tttagcattc acggtctatc tgcagtgagt gagagcttgc tgtgtattgg   1560
tgtattgtct cgtattattg ttcctctcat ctcctatttc ccccataaat atatattaca   1620
tctaaaataa ttcactctag gccaggtaca gtggctcaca cctgtaatcc cagcactttg   1680
agaggccgaa gagggtggat cacctgaggt caggagttcg aggccagcct ggctaacatg   1740
gtgaaaccac gtctctact                                               1759
```

<210> 554

<211> 2001

<212> DNA

<213> Homo sapiens

<400> 554

```
aagcaccagc cccagcccgg ctccctccag agcccacatt tgggcccagc cccgtccaag    60

gctgcatccc ggccctatcc cgggtcacgg agtgaccctt cctcgtcccg atcaccccgc   120

ccggtccacc cgccatgggc ttcttagagg aggagggcag atggaacctg tccttctccg   180

gcgccggcta cctgggcgcc caccacgtgg cgccaccga atgcctgcgc cagcgagccc    240

cgcgcctcct ccagggcgcc cgccgcatct acggttcctc gtctggggcg ctcaacgcag   300

tcagcatcgt ctgcggcaag tcggtcgact gcccctccac catcacggtg tcgcccttcc   360

atgggacagt ggacatctgc ccccagagca cctcccccaa cctgcatgag ctgaacgtct   420

tcaacttcag cttccaaatc tccactgaga acttcttcct ggggctcata tgtctcatac   480

ccccccagcct cgaggtagtg gccgacaact gcagacaagg ctacctggat gccctgaggt   540

tcctggagag acgtggactc accaaggaac cagtgctatg gacgctggtg tctaaggaac   600

ccccagcccc ggctgacgga aactgggatg ctggctgtga ccaacgctgg aaggggggcc   660

tgtctctcaa ctggaaagtg ccccatgtgc aagtcaagga tgtacccaac tttgagcagc   720

tctcaccaga gctggaggct gcactggaga aagcatgtac gagggatccc agccggtggg   780

cccgcttctg gcactcgggg cctggacagg tgctgacgta cctgctgcta ccctgcacac   840

tgcccttcga gtacatctac ttccgcagca gaaggttggt ggtgtggctg cccgatgtgc   900

cggcggactt gtggtggatg cagggcctgc tgaggaacat ggccctcgag gttttctcca   960

ggaccaaggc ccagctcctt gggcccatca gccctccggc cactcgcgtc ctggaaacaa   1020

gcccccctcca acccagata gctcctcata gagaggagct cgggcccacc caccaggcct   1080

gagggggccg agcagggcca gcccagtgac tggtgtccct tgattcctgc tctggccttt   1140

gtcctgtgtg cccacatctg ccccagcggg aagaggccct gccaatctcc gtggagaccc   1200

tgcagcttgg agcccgttcc ttggggcgca gcctgtcagc atgtccccgg tcactgtgta   1260

cccaggtcac ctgccctccc tcttgccccg tctcatcagg gagagaaagg aggacagcca   1320

cagagacaca tgtcttactt tcagaatttc cacgggggga ctaggagggc agcattgctg   1380

gggagagggg ctcctgttct gccgtggagc tgcccacgga gcacctcaca gaagattgag   1440

aaagtgcctg atgcccgcgt cagagaccag aggagccaac tgagatgatg gggtgggggt   1500
```

```
gctccccca gactttctca gtcctgcagc ggcccttggg ggtgaccccc ggcatctacc    1560

ccactcagga aaccttgact tctgacttcc tatcaggtcc agagggtgga aggccctggc    1620

aggaagcagg aggaggagga gaggggggtc cgggtctttt caggatccca gctgtgggtg    1680

cttctgttgg gcccagtggc ccctgctatc cccacagcct cattcctgca gaaggtttgt    1740

gacgtagctg tgcctgtacc tggggcagag aggatgccag ggacaccagg cctctggcct    1800

ctccacgagt cactgctctc cccattggca gcacgggacc catgctgtgc ccccggccag    1860

gccctgagga aatgctcagc ctcagtggag atggggaggt tagagagatg gaggcgtgag    1920

tgagaacggg aagcaaagga atacacgtgg gaactaaaga gaaaaatgac cagcctgggc    1980

agcatagcaa gaccctgtct c                                              2001
```

<210> 555

<211> 2197

<212> DNA

<213> Homo sapiens

<400> 555

```
gtgcgcgcag ggcagacggt agagcggaga cgacgctccc agactcctcc ggtctccccg     60

ggcagcatga agaccgccga gaacatcaga ggaaccggca gcgacgggcc gcggaaacga    120

ggcctctgcg tcctctgtgg cctccccgcg gcaggaaaat cgactttcgc gcgcgccctc    180

gcccaccggc tgcagcagga gcagggttgg gccatcggtg ttgtcgcgta tgatgacgtc    240

atgcccgacg cgtttctcgc cggggcaaga gcgcgaccgg cgccatccca atggaaattg    300

cttcgacagg aactgttgaa gtacctggaa tacttcttga tggctgtcat taatgggtgt    360

cagatgtctg tcccacccaa caggactgaa gccatgtggg aagattttat aacctgctta    420

aaggatcaag atctgatatt ttctgcagca tttgaggccc agtcttgcta cctcttaaca    480

aaaactgctg tttctagacc tttgttttttg gttttggatg acaattttta ttatcagagt    540

atgagatatg aagtctacca gctggctcgg aaatattcgt tgggcttttg ccagctcttt    600

ttagattgtc ctcttgagac ctgtttacag aggaatggcc agaggccaca ggcactgcct    660

cctgagacca tccacctgat gggaagaaag ctagaaaagc ccaaccctga gaaaaatgct    720
```

```
tgggaacaca acagcctcac aattccgagt ccagcatgtg cttcggaggc cagcctggaa    780

gtgactgatt tattgctcac tgctttggaa aatccagtaa aatatgctga ggacaatatg    840

gaacaaaagg taaacttcca gtgtaaattt aatgtaaatg agaaggaaca actttttgta    900

ggaagatctt ttgagccgat tataaaatgt gagtgaaacg ggagatgcgt tgtcattggc    960

ttggcctctc accagcactc actgctgaca gctcatgccg gctgggcaaa gccgattgtt   1020

aaactttcaa aagtgttgga gcctgttgat ggtttgttgg taggaatgtt tacatcacag   1080

aaattggcaa acactacaga taggtctggg gttttttttct gggagagtca attattagac   1140

attcaccagc atatcaccgc ctagctggaa cccagtttac cactggatct gatttggttg   1200

gactctcttg tagggaagaa taacaaacag aaaagccgct taaacttttc ttttagtcct   1260

ttcaaataca tgtgacctat tctttagcca tttattttat aaaactatgt gacttctaat   1320

aacaatgtct gtattaacat aggacacaga cagaattatt tgttcaacta acattcttca   1380

taaaactgat cagacactcc gaaggattgt atctcagaca atgaaggaag caaaaggtat   1440

gatgtgtcag ttatgtgttg agttggtatg attgtgactt tctactgcta ctgttattcc   1500

cgacactcag agtttattag ttttcagtca taaaagttca catcatgttt tcaatttaat   1560

tatgcaattt gactaaatgt aactaaaaat tctacctctg gaactgagtg ttcatccatc   1620

caacaaattt ttactgagtt gccttactgt actaggcctt actctagatg ctggggaatc   1680

ggcagggagc agaacattct aatgaggaga cagacaaaac atgattacat gagtatatgc   1740

ccatgctctg aagaaaattt aagtaaggta aggcagtgta gtgatgggag gatttatttt   1800

taaaaaggta atcaggaagc cttctcagag atgacattta agcaaagatg ggtaagagcg   1860

aaccatgcag ctatctggag gatcattcta ggcaatgaac acatcaagtg cagaagcgca   1920

aaggttggct ggttgcagtg ttgcagaatc gagaagaggc cattgagcac ggggtgagat   1980

gaacaagtgc ttcctcacaa cttgaagctt ctagcagaag aacttaacaa gctcaaagca   2040

gagttttgg aagacctaaa acaaggaaac aaaaaatatc tgtgctttca gcaaaccatt   2100

gacataccag atgtcatttc ttttttttcat tatgagaaag ataatattgt acagaagtat   2160

ttttcaaagc agcattaaaa tttctgaact gccaatc                            2197
```

<210> 556

<211> 2814

<212> DNA

<213> Homo sapiens

<400> 556

agagagaaag	aaagaaaata	gggacagggt	cttgctgtgt	tgaccaggtt	ggttgtgaac	60
tcctggcctc	aagcagtcct	gcctcagcct	cccaaagtac	aggcgtgagc	cactgtactc	120
ggcccagctt	ttccttttaa	gcttttcggt	aggtctattc	ctttccccac	ctgttatcca	180
ctgcctcagg	aagctgcaaa	gttagtcagt	tgcctgcaat	tacaccctga	tgaaaagact	240
tttcacacca	ggcaaaggct	gaaccaagtc	aattacagcc	aaccttgcaa	gaggagcctt	300
atcagggaac	caccagaccg	gtcagataat	gacagttctt	tgggcatgag	acttgaaagg	360
agctccagcc	tcattctgct	ccctcttgtg	gcgccaggct	gctgtttttc	atcaggagtg	420
cagaatgtga	attttcaagg	ccaccacgga	actgcagagt	gtgcgatctt	aactagggca	480
agtgaaaatg	ccactgttct	taccaagatt	ctgctgtttt	tcttgaataa	acattctccc	540
gactgcccta	agcctctggc	taatttccag	agttctgaaa	aacttgattc	tgaccatttt	600
tgccagtttt	ctcactgcta	ttatggagga	gagaattttt	ggaggtcctt	acttcacgga	660
ttttgctgat	ggcacacctg	gaaaactgat	ttttgtttgt	ttgtttcttt	gagacagagt	720
ctcgctgtgt	cacctaggcc	ggagtttgca	gtgagccgag	atcgcaccac	tgcactccag	780
cctgggcgac	agagcgagac	tccgtctcaa	aataaataaa	taaataaata	aaataaaatg	840
ttcagtttct	ccttcacgct	aatcacagtt	cacgtgcttg	acattcacat	gcggctagtg	900
gctaccatac	tgggcagtgc	tcggttaaag	actgttttct	acagttggac	tgtgggaagg	960
ataaaaattc	cagaggaaaa	gtatgggcaa	aggcacagag	gaggataagc	aagcagctcg	1020
tccagatgag	agtgagggaa	gaagagagag	tgcaagttcg	aggcactagg	ctgtctgggt	1080
tcaaagacct	gctcttccac	atactgttgt	gaactttgac	aaattatttc	acctttctat	1140
gcctcaggtt	tctcagctgt	agaataggga	tactaaccct	tgctgtgaaa	attaagttca	1200
cacacacatg	gtacttctct	tagaatgagg	ctttcaagtg	ccagtcagtg	ggccctagag	1260
gctggagcaa	ttgccagggc	cctggtcata	aaggttcaga	aattaacggg	tgacaggaag	1320
cgtggtgagg	cagccggatg	ggaaggagaa	ctcctcttct	ctggcaaaat	gtctcagtct	1380
gtctcgtttc	tcccagcagt	tttgtcatag	ttacgaatgg	tgtttcttct	ctaggaggga	1440
aattccttct	catagctatc	tctgctcata	tagatgtctg	taggcaatag	ggtgggctgg	1500

cttccagtgt gggtgaagat ggacaaggtc agaccaatcc agggagcacg tctttcttgc 1560

aggtggacat tgcatctggg atggccattg aagggatgtg ctatgcccag gtatgtagca 1620

accagcccat gcctgcttgt taacataggc tgggccaggc tagagggact ttgtatggta 1680

catgaccaat tttagaaggt tcttctcaac acaaacagtc tgaccgcatc catcgtccct 1740

cataagtcac ctggagtggc ttgaggagag ccatagtgct tctctctggg acttttccct 1800

caaccatcta atgtactggg gttcatcctg cccacttaat gccgagaatc acagaacaca 1860

ggtccttaag aggaagaacc acatcttttg cctctgtatc ggatgccact gtaaagttca 1920

ggatggagtt gggaggtcaa gggcttggtt gtagcctgca ggctgtgttc aatgtagggg 1980

ctgtacactt gggactgacc tattaaatct cttactcatg ggtgagtaaa aaatgctaat 2040

ctccacgtta acagatatcc aaaatactcc taaggggtcc tgggacttgg agaaactagt 2100

gtgaacctgg attcaaagcc agatttctta ctgcaaagaa ttttttctc tactgagcag 2160

cctcatgtca gaccactgca gacggcagct gagttctcag gaggcatgaa agcagtgtgc 2220

aagtggaggc taatgctgat ggggcacaga gaatacaaag ctggcctgt cttccccagg 2280

agacaaagca gccacggagg cttatacctt tgcatgcctc aagatcagag tccagagaca 2340

atggaaacac ttggaccctg gccttgtctt gggctggaca agcttaagca actctttttg 2400

ggcctgtggc cctgctcccc caaaactaat attttgtacc ttgttgcaga atattccaac 2460

ccgggaccgg ctagagggca tggcagcctt cagggagaag cggactccca aatttgttgg 2520

caaatgaccc ccattttaac cttcagcatg ggagatgcat gccctgaaga gcaggatcca 2580

gaaggaagat ttgtggccag attgccttca tcatttcacc tctccagact tccatttctt 2640

cacaaggatg atgatggaaa taaaatgact ggcgtgatgc ctggaaccaa ggtgctgatc 2700

ctaccaccta ctgctacctt ccttagcttc accctggcta gaaataatca cgagggttgg 2760

gtttgctttg gaaaatgcct gtctctctac ctgaatgata aagaattaaa ttag 2814

<210> 557

<211> 3420

<212> DNA

<213> Homo sapiens

<400> 557

```
gtcgcagccc cggaggagcg cgcgagcagc ccgggatggt gcgcgctgcc ccgacagccg      60

ccgccccggg gccccgagcc gccgccccgt gctccgggga cagggctccc cgcgccccgc     120

gcagctgagc gctgccgccg ccgcagcaga caggatctct ctcagttacc caggccggag     180

tgcagtggcg tgatcctagc tcactgcagc cttgaacccc tgggctcaag tgattctcct     240

gccttggcct cctgaatagc tagaactaca gatcaacagt acaaattctg aagtttgtaa     300

acttgctgat ggtggtggta agccatggca gatgataaag ttgctatctt aacggatgat     360

gaagaggaac agaagagaaa gtatgtgctt gcagatccct ttaatggtat ttccagggaa     420

ccagaaccac cttcgaatga aacaccttcc tccacagaaa catctgctat tcctgaggag     480

gaaatagact ggatagagaa acattgtgtt aagataaaca cgatcttct aatttccaag     540

gtcttttatt ttttctttta ctctgcctat ggctctctct atcccctttt gcctgtgtat     600

tacaaacagc tgggaatgtc tccaagccag agtggactac tagtaggtat tcgttacttc     660

attgaattct gcagtgcccc cttttggggt gtagttgcag accgctttaa aaaaggcaaa     720

attgtcctcc tcttttctct tttgtgttgg gttttattca acctgggcat tggatttgtc     780

aaacctgcta ccttgagatg tgtaccaaag attcgcccaa caactcaccc caccaatgca     840

agtcaccagt taactatcct gccaacaaat tcttccttta cctctttcct caccatatca     900

ccaaaaatgc gtgagaaaag aaaccttttg gaaacagggc tcaatgtctc agacaccgtt     960

actttgccaa cagctccaaa catgaacagt gaacccactc tgcagcccca gacaggtgaa    1020

attactaacc gtatgatgga cttgactttg aactcaagca cagcaacccc tgtctcccca    1080

gggagcgtaa ccaaggagac aaccactgtt attgttacca ccaccaaatc tttaccttct    1140

gaccaagtca tgcttgttta tgatcaacaa gaagttgaag ctatattctt ggtgatcttg    1200

gtagttgtca taataggaga atttttcagt gcctcttctg tcacaatcgt agacacggtc    1260

acactccagt atctgggaaa acacagagat cgctatgggt tgcagcgcat gtggggctcc    1320

ctgggctggg gcctggcgat gctgtctgtg gcatcgggga tcgactacac ccacatcgaa    1380

gtgctcatcg atggaaaggg gtgtaagccc cccgagtaca ggaattacca gatcgtcttc    1440

atcgtcttcg gcgttctcat gaccatggcc ttgatcgttg ccactcagtt ccggttccgc    1500

tacaaccatt tcaaaaacga tgattctaaa gggaaagagg tggagatccc gcaggtggaa    1560

aggaacaact ctacagagtc ctctgaggag acaccaacca ccacaagcca ctcgcaggcc    1620

ttcaactttt gggacttaat caagctgctc tgcagcgtgc agtatggctc agtgctgttt    1680
```

gtggcttggt tcatgggttt tggatatggc ttcgtgttca cctttctcta ctggcatttg   1740

gaagacctca atggaactac aaccctcttt ggggtctgtt cagtcctgag tcatgtgtct   1800

gagctgacag catatttttt tagtcacaag cttattgaat tgatcggcca catcagggtt   1860

ctgtacattg gcctggcctg caatacggct cgctatattt atatttccta cctggagaat   1920

gcctggactg ttctccccat ggaagttctt caaggagtga cacacgcggc catctgggca   1980

gcatgcattt cttacctcag tgcagccgtt cccctgagc tgaggacatc tgctcagggc   2040

atcctgcagg gccttcacct gggtttggga agaggatgtg gtgccatgat cggaggcgtg   2100

ttagtcaatt attttggggc tgctgcaacc ttccgaggaa ttggcatggc ctgcttggtg   2160

atcctactgc tctttgccct gatccagtgg ctggcagtgc cagatgagga agaagacaag   2220

acaatgttgg cagaaagaat tcctgttccc tccagtcccg ttcctatagc aaccatcgac   2280

ttggtacagc aacagacaga agatgtcatg ccacgcattg agcccagact tccacccaag   2340

aaaactaagc accaggaaga acaggaagat gtgaacaaac cagcctgggg agtcagctct   2400

tctccctggg tgacctttgt ctatgcactc taccaaatta aagagatgat gcaactcaca   2460

agagacaacc gtgcttctga gatacagcct ttacagggga ccaatgagaa tagggaaaat   2520

tctcctgctg gtagagccca gcctgtccca tgtgagactc actctgaccc atctagaaac   2580

cagccatccc ctgacgcagc agcatctcag acgcagacca gccccgctca ccccagtgtg   2640

gacccgtgca cagaggagag tgaagagcag caggctcagc tggccgcggg aggacactga   2700

gggcatcctg ctcatctcac accctgcatg gaatcaggct cctcagccag gacacagggt   2760

gaggccccccc agccaggata tgcctcccct ggaggagcac agcactgcat atgcttctaa   2820

atatctaaac tcattaacat ggaaacacac acacaggagc tacagtacat attggcagga   2880

aaaggtaaac tttcgtaatc tcattggaat tacaacaggg aaatggagtt caatgaggac   2940

tttcagttct ttgcttggtt aggttaagga tgatagaatt tctctgccag tgcagtaaga   3000

gttgaaaccg gcagttacac taagtaagtg gagggaatga aagtgtttcg aggtgaatgt   3060

ggatataatt tccctcttct gattatttat cttatttgg ttcctaacac aaactgggaa   3120

gagatagaat tcatctatac tttctttttt cttggagaga accgtttaaa aaattacaag   3180

atatatttaa aaagtaacca gataaaagta gcacatgtgc ttttgttaaa aataaagtta   3240

aaagttaaag ttaaaaaatg aagttaaaag tttcatcaga aactttacat atctttagca   3300

aatatatttt tatatgtgta tggcatataa tggaaataat tctttgagca acagaagcta   3360

ttattaacta ctgcaagcta agccgagctt aaaaatgcct tttgttttaa atgggctttg   3420

<210> 558

<211> 2710

<212> DNA

<213> Homo sapiens

<400> 558

tgactcatca	agatgcagaa	gccatagtga	cagacttctg	gttcagactc	accactttgt	60
gtctcttttt	ttctccatgc	tacccagccc	ttttctccat	ttaagaaatg	ttggcagggt	120
aatttaaaaa	cactcaccta	gcttggatta	tttgcatttt	caccaaaaat	cctgcacttc	180
agcattcatg	tttatgggaa	tagtcgcagc	tactgatttc	atttggttaa	actgttataa	240
tattgattca	ttttgtttat	ttcagttcat	aaggatgcaa	tttatcctaa	ttttgatttt	300
ggttgtagag	gttggcgatt	tgaaggagct	gcagacacta	gacatttcta	ccaatcgttt	360
gctaacttta	cccgagaggc	ttcacatgtg	cctttctctg	cagtacctca	ctgtggaccg	420
aaatcgtcta	tggtatgtgc	cgcgccatct	ctgccagctg	cccagcctca	atgagctctc	480
catggctgga	aaccgtcttg	catttttgcc	acttgattta	ggtcgatctc	gagaactaca	540
gtatgtatac	gtggataaca	acattcacct	gaaaggcttg	ccatcttatc	tgtacaataa	600
agtcatcggg	tgcagtggct	gtggtgctcc	cattcaagtt	tccgaggtga	agctgctttc	660
cttttcatca	gggcagcgaa	ccgttttcct	cccagctgag	gtgaaggcca	tagggacgga	720
gcatgatcac	gtcctccctc	tgcaggaatt	ggctatgaga	gggctgtatc	atacctacca	780
cagcttgctg	aaagatttga	actttctgtc	tccaatctca	ttacccagaa	gtctcctaga	840
gctgctgcac	tgccctctgg	ggcactgtca	tcggtgtagt	gagcctatgt	ttaccatcgt	900
ctaccccaag	ctctttccct	tgagagagac	gccaatggca	gggctgcacc	agtggaagac	960
aactgttagt	tttgtggctt	actgctgctc	cacccagtgt	ctgcagactt	ttgacctgct	1020
gagttgataa	acactcaaga	acctcaggag	cgctgccagc	ttgacactgg	ggaatccagc	1080
cagtccagca	cactcttcca	tcctgtcctg	tccaatgcgg	gggcactgca	gaactctcta	1140
gaaatgtcat	gattgagctt	cagagctaaa	atgccttcac	ccttccccca	agttggaata	1200
tatcctcccc	caaattaagg	acccatttgt	cttctgtgtt	tttccttttt	atgtgagtgt	1260

gtcttttaca gaaaccattt agattgatgg gcctccccaa atctaattta aagcaagttt 1320

ccggtccttg gagaacagtg acttgatcat ctagccagat tcccttttga acacacatac 1380

cttcagtgat gcttcctctc ctctcccctc ccttgctttc cccagagagt tatttccctg 1440

agaccatgtt ctccacagtg tctccagtgg aaacttgtca gttttttgagg agtttcagca 1500

aaccccgtgg cctcaatggt cttgagtagc agggtggggc cctgagttg gcagtaaagt 1560

gaggctccca tggaggctca gtgagggtcc cagagcacac accctctgga aagttccagc 1620

cttgtttata cgttctacag tgtagcaaca gacttttgtg agggatttta aaaacaaaaa 1680

tgtagattgt aatgaaatac acttcctgtt ttttaaaagt gtttgcagaa aatgattttt 1740

gaagttttta aatttcctga taagattttt tttatatgag aagaatttga ggaatatttg 1800

aagctttaca agatctgatt tttttctttc tcaatataaa gtttccatac aatgagaaag 1860

ggggagaaaa cacacattga aataagacct ccgtgttctt ttttgatggg tttatgattc 1920

agtttatact gactttgaaa tatttttgtc acatgtgaaa ggcttcagct acttccacta 1980

ctggtttttt ttgttgttgc tgaggcagga gaattgcttg aacccggcag gaagaggttg 2040

cattgagctg agatcacgcc attacactcc agcctgggca acggagcgag actccgtctc 2100

aaaaaaaaat cattcaagtt tcactgtgcc tacagtgagg agctacctcc ttgtgtcatc 2160

agctaataga tctgaaagtg atgccggtgt ctctaggaaa ggaattgatc atagccaagt 2220

gactgacatt ctctcggtca ggaaaagagc ttgcttcaca gcctttgaag tatgactgta 2280

tgtgtggtcc ccttgtactt tggagacaga aggtactggc agcgagtgtg gtggatgggc 2340

agaaggtgta gcattcggag attatttctg tatgtaatta agagactttc aagggttagc 2400

cagacttttt tccactcaag tgtggattat ctttgctacc tgtgttaaag aatatcaggt 2460

tttgtttctt attgtgattt ttgagtctaa atgatccaag attttaaaa tagatacata 2520

atgaaatcca ggcctctgaa aaattatggc aacattcatt tggagtatgg ctaaaaactc 2580

atactttatc caatttggtt gcctctctca gttactgcag tttatagaat aattgagctt 2640

gaaccatgtg aatgctcaga atgtcaatgg tggagtattt attcaagaga aatggctgaa 2700

tctcgatacg 2710

<210> 559

<211> 2674

<212> DNA

<213> Homo sapiens

<400> 559

gaaaatttat	cagcctggcc	atgtaaaaag	tgaaaaagca	aggatgtagc	ccagaggcca	60
tttgctaaag	agattagcat	ggctagaagg	gatccaggtg	ctattcctca	agacaatgga	120
agaaagacct	caaaggcatt	tcagagattt	tcaaggctgc	ccctcttatc	acagacccag	180
aggcctagga	gggcagaatg	gtttcaggga	gcaagcccag	gcactttctg	tgggcttact	240
gcccaagacc	acctccagac	tctgtgcccc	agcacagtac	tctgaggaca	ccccagcaag	300
aactcaagca	ggccaaggtg	tggctcatgc	tgcagatctg	aagtgtacc	acaacccaga	360
gtggagggaa	gttaacatcc	tatggggcaa	ccttcagcta	ttggaagaca	ggagccaggg	420
gatagatagc	cctttactcc	caagtgatct	ggagatgcat	ttcatccggc	ttctcagatg	480
gttttctggg	actgaacaac	ccttcaccag	cggagatggc	caacttgaca	agacctcctt	540
ccattggatt	tccctcctgc	tttgctgtgc	tccctctgcc	ttactccagc	tttctgaggt	600
catgctcccc	agtcaaatac	tatcacataa	acctctgcct	tgacttctgc	tttctgaaaa	660
cacaggctaa	gctaactggc	accctcgaca	ggctctgggc	ccaaccacgg	aatcttatac	720
ggagctacgg	aaagagaact	gcaggtagat	gatcagcagc	aggaccgtgg	cccaaaacaa	780
gcaccagggg	atagagcaga	agttccagcc	tgagcccgtc	tggtcctgcg	acttggtggg	840
gctgggcgcc	cgggagaagg	tgtaggtggt	cgcctcctcc	tccagcagct	tctcgctggg	900
cttccagtgc	acgatgccct	cctggcaggc	ctcgcagaac	tctccgcggt	gccgccggtt	960
gtcctggcgg	ctggccacgt	ggatgcggta	ctggccgcca	cgctcgccgt	agcactgctc	1020
gcgcaggctg	gtgatgaggt	tgtccaccag	gccctcgatg	ttctcctcca	gcatgctgga	1080
ctcgtccagc	cgcgccgtgc	cgcactcata	gcacagctgc	ttgaagacgc	gcatgcgcac	1140
cgagcccgcc	cgctgggcgc	ggtccaggaa	catgtggaag	aggatgacca	cgtagggcga	1200
ctgccaggtg	tgccagcacc	aggagcagtg	gaacctgcgg	agacgggagg	agagggagga	1260
atagaagacg	ggcggaggtg	gtggaaacag	ccctaggaat	ggcgtgaggg	gacgtggagg	1320
ctaagcagag	cctggaggtg	gaggaagtgt	gttgccggcg	ccctgggttc	attagctttc	1380
cccaggaagc	cactcagcct	tgcaagtgcc	cctaggacta	cagcaggttc	ctcaggatgt	1440
caccgggcat	ccagcagtgc	tctacctcct	cagtgctttc	cagaggccta	actcccacca	1500

ccccagcatt gggcgtcatt cttattcctc atgggcaaaa tgcgcttggt gcactagagt   1560

gagagaggca tccatgtaca cacagctaga ggcagaaccg gcgcccagca cgtaacaggt   1620

gcccagtaat gtttcctgaa ttgaagtgaa ttggctgaac cagggcaagc aggaaggcct   1680

tgcttctgac ttccaggctg caccactcag cctccccatc ttatgtctca aagacggaaa   1740

aattgtgact cagagaggaa gagtaacaca ggtgatcagt agaagagctg aaatccaact   1800

caagtgtcgt agttcccagt tagggactct ttctctgact tccagtctac gccagcctaa   1860

tagtgagatt gaagctaaac acttgggttc tacgtaatct tcctctcctt ggaaggtgcc   1920

ccagagctag ggacctaaag gcggcctgca gggatccacc ttcctgggct actcacctgc   1980

ctgaagcatg caattccagg tactgcttcc aaccagggct cagcacattg tgcttgaggt   2040

tggggtctat gatgaggtcc cagctgtcag ccggctttgc ctcctccatc ttctcataga   2100

agactttctt ccactcatct gtggtcacgc ttttacacat ggtctcgtca gtagtgaggg   2160

aaggcaattt ccaccttagt gagaacacgg agagtgaggg taggtgcagg gcagggcagc   2220

gcagtctcca cggtctaaaa atcctcatcg acaagaccag gaggaagcag gacccagctc   2280

cctcctttgt ccgcagtgga acctgtttcc acggcaacca ggcaggttgc cagaagacag   2340

agcttgggga ggagggagtc tctgaagagg tgtttcaagg ccctgaactg agattgcaga   2400

ggcagagttt gtgggtctaa atgatccaag acagagtggg ggacctgacc agagattgag   2460

cttcagacca tctcaccctg gcctggaaag agtatgggga ggtgaggact gggaactggc   2520

tcagtttcac cttgccgtcc cctggaggca tcatcagcat ctggctgcta cggtaaccat   2580

gatgccttag gcagccaagg agaaatgagg gatggggaga tgtaaatttg ttagtagatg   2640

gagcaataat aataaactct ctctcggctt cccc   2674

<210> 560

<211> 2333

<212> DNA

<213> Homo sapiens

<400> 560

atgttatgaa ctttccaatt atactttcag ttattttttaa atatacaata aattattgta   60

```
gtcatcctgt tgtgctatca aatactagat cctattcatt ctatctaact atatgtttgt    120

acccattaac catcccccac ccctccacta ctacccttcc cagccttggg tagccatcct    180

tctactctct gtctccatga gttcaattgt tttgattttt agcccccaca aataagtgag    240

aacatgagaa gtttttctgt gcctggatta tttcacataa tatccttcag ttccatccat    300

gttgttgcaa atgataggat ctcattcttt tttatggcag aatggttttt cattgtgtat    360

atgtaccaca tttcctttat ccattcattt gttgatggac acttaggttg cctccaaatc    420

ttggctgttg tgaacagtgc tgtaataaac atgggagtgc agagatgtct tcaatatact    480

gatttccatt cttttaggta tatacttggt agtaggattg ctggatcata tggtagctct    540

attgttaggt ttatttttta tttaaaaaaa catttttttg agacagtctc actctgttgc    600

ctaggctgga gtgcaatggc gcaatcttgg ctcactgtaa cctctgcctc ccaggttcaa    660

gtgattctcc tacctcagcc tcctgagtgc ctgggattac aggtgtgtgc caccacactt    720

ggctaacttt cgtattttta gtacagggtt tcaccatgtt ggccaggctg gtctcaaact    780

cctgatctca agtgatccac ccgcctcagc ttcccaaagt gctgggatta caggcgtgag    840

ccaccatgcc cggtcctatt gttagttttt tgaggaacct ccaaaccatt ctccatagtg    900

gttgtactaa tttacattcc caacaacagc atacaagggt tcccttttct ccacatcctc    960

gcccccattc cttattgcct gtcttttgga tagaagccat tttaactgga gtgagatgat   1020

atctcattgt ggttttaatt tgcatttctc tgatgatcac tgatgttgag ccccttttca   1080

tatgcctgtt tgctattttt tttttttttt tttcagaaat gtctattgag ttctttttcc   1140

tatggggact gttatgattt gcattcacag ttgagggaac tgagggctgg gaatgttgag   1200

acttttcaga ggtcctaaaa gaatggaccc ctgagtcaat ggcacacgaa gctccctgtc   1260

cagctttctt ccacatggca ggacgtaggc ctcagactgg aaccctggca gtcatttttg   1320

ccctgtgggt ctctctgagc cctgcccacc agaagcagct gcagatccca tggcccaggt   1380

cacattctct tgggggccac ttctggggac acacaaggaa gactgatgtg ccagaaacat   1440

tccagtggcc ccgggttcct attccaactc tgcctgcact atcttcattc aatcattcct   1500

tccagcctca accttctcat gggaaggacg caaccaccca ccacaaaact cactgtgaga   1560

gtcttgtgat agtatagtat gttcatagcc tagcgcctgg gagagtgctc aagaatgggt   1620

agctgtgagc ctggcaggtg gtgcacacct gtggtcccag ctactcagga ggctgaggcg   1680

ggaggctccc ttgagctaag gagttcaaag ctgcagtgag ctatgatcgt gccattgcgc   1740

tccagcgtga gcaacagggt gagacactgt ctcaaaaaaa aaaaaaaaaa aaaaaaaag   1800
```

aaagaaatgg tagttgctct gggtgaactc cttcagagga tggatttgat ttcattacca 1860

tctctaagcc ccagacaccc tgcaggcctt ccatacagca caggttggag ctgaaggagt 1920

gcccaggctg cggatggagg aaggacgtgc tcgggagaag gtgaagatgg gagagaagca 1980

agatcttctg tgtttggacc aaggacacat ttccttactc catagcagct gtggtcagtg 2040

gcttagctcg gacaaggaga tgagagccca tgtgttgtga gggttcttct gggaactctg 2100

agaaggcagg agccgccccc gcccttcact gcctctcttc cattctgcag catggaatat 2160

ggatgtgtgg tctggatgta cagacaccat tttggaccat aaagacaagg acgattgtct 2220

aaggatgaca cagccagagc actgagagtg gcgagaagga caggggagct gctgtgccaa 2280

gcaggactgt ctctcttaag agaaaaataa aatttattgg tgtttaaacc att 2333

<210> 561

<211> 2062

<212> DNA

<213> Homo sapiens

<400> 561

aaaaatgagc aattcttgtg ctccaggccc tgggtgaggt gctgggatta aaacagtcaa 60

gaatggtcac cggccctgcc ttcgtgagtc cagtctggtg ggatcacaac aaagtgagac 120

tctgcttccc cccaggcaga gcccagggac ggcagacaca gcacaggcac atgctgcgca 180

cttccaaggc acctttctcc tagatgacgt gtgacacagc agccctggtg tgccttggcc 240

ttgaacaatt aggtagggca ccagtagggg caggaagact gacagcatgg accactactt 300

cctgcgtggc tggggcagga ggccctgaaa gaagcagcta cagatcctgc tttccaggtg 360

gtctcaccac aggcacagcc agttgcctgc aactaagaac actgaagccc ggcctgcttt 420

gggggcattt ccagcatccc ctcctatctg gaatctcttc ccaaaacatc cctgtcccca 480

gggactgcat agctcctttc acctggtggc ccagccctct ctgtgtgcca ctggctccct 540

gccctcctgg gtcccaggac ctgggctgag tgtgcaactt agcttccat ctgcacaggg 600

ccctctctgc gggctttgcc ctccctgatg gcatgttctt ctcctaaccc actggagtga 660

ggggcattct tatcgtctcc acttacagaa gagaagcctc tcatacagaa agggtagttt 720

ccctttcagg ctaaatcttc tgattttacc tcttatagtg tccattccag ccctggcttc 780

tgaccagcgt gagtgcagct gaaagaggct aggatggtca gaagattttt tttaaaagag 840

aaagaatact tgttttggac cagacctgta gggtaacagc ctggggtgca tgtaaacaga 900

acttgggcct ctccagggag caagtgggta ggtggtgggg gcagagcagt tattagtggg 960

gcttcaggag tgagagggcc agtctgggca tctgtgtgcc agagggtcct ctcctgccaa 1020

ccaggtggac ctggctctgc tacactagtt tctggggggtg caggggaagc aggaagctgg 1080

tgggggagtag gtggaccatc tttggagtag ggagacctat cctggctttg tggggttaga 1140

ggggacgtgg gaagggggta cctggtagga acagcttcct gcttcctctc tcatcacagt 1200

tctgctactt ggcaaataag gcctcattgg agcagaggcc cagagaggcg caggagaggg 1260

aatggcaagg agggatgtgg agagaccttt cactcacagc tggagccaga gacaacccca 1320

agttcatagg aagtgctgtg tgaccgctcc acttgcatgt ggctttctcc cactttcaca 1380

tctggcttct gacacccaga gctgcgtgtg aggccaggga gagggggcca cctccctggc 1440

accccagggc caggggtgtc agagctgcac aggaagtgaa ggaatgctat caggaagggg 1500

gtgaggtggt gccattccag gaatgggagg ggcagggcct ggggccaccg actgtgcaga 1560

gacaaagctg ggccatccat accttctgga ttttcctgat caggcccaac tccaaacact 1620

ctgtcctgtt gcccccagga gtgtgtaagt tgggagggtc atttgggggc caggctctgt 1680

gctgcgtcca gggcagggga aagcatggga ggggcaagag aggcaggaca ctgccctgga 1740

gaagacaagt cccttgttgg ttttctccca gggctgacag cacagacctg acccaggctc 1800

tgggtagagg aggcatgact ggctagtggg gctagccttt gccctataac tgacctgatc 1860

cgtaggtgtt tcccaggggg cctcggtgtc tcagcctaca ccaaggcact gaaggagagt 1920

ctccctttcc tttcctgaat gtatcggcaa agaaaaatgg gcagaggctt ctaagagcat 1980

ccttgcaaaa ggctcccaag ggatgggctg tctatgtctt attgcaagag aaacattcct 2040

ctgatttagg aggaactgca ag 2062

<210> 562

<211> 2183

<212> DNA

<213> Homo sapiens

<400> 562

```
gaaaggcggg gcgggtctgg ccacggggcg accgagatgg cggcctccgg gggcctagag    60

ggaccctggg cgtgcactcg cccttccggc tcggccttta gttagtgacc agctcctcgg   120

cgttctgcag agcgtgggtt tcagcgagtt ctacgtgcca gctcttgagg atcttgcttg   180

tccaaaccca gaagacagtg catgaagcca ggggacatcc gccatgctcc aaacaacttg   240

gcctcaggag tcagtgacct ttgaggatgt ggctgtttac ttcacccaga atcaatgggc   300

cagcctcgac cctgcgcaga gggccctgta cggggaggtg atgctggaga attatgcaaa   360

tgtggcttct ctggtagcgt ttccattccc caaacctgct ctgatctccc acctggagag   420

aggggaagca ccatggggcc cagatccctg ggacaccgag attctgagag gcatcagtca   480

aggtggtgag tcctggatca aaaatgaagg gctagttata aagcaggaag cctctgaaga   540

aacagagttg cacagaatgc cagtaggagg acttctcagg aacgtttctc agcactttga   600

ttttaaaagg aaggcactga agcagacttt caatctaaat ccaaatctga tacttcgagg   660

tggaatgaag ttctatgaat gtaaagaatg tgggaaaatc ttccgatata actcaaagct   720

tattcggcat cagatgagtc atactgggga aaagcccttt aagtgtaagg agtgtggcaa   780

agctttcaag tccagctatg attgtattgt acatgagaaa aaccacattg gagaagggcc   840

ctatgaatgt aaggagtgtg gcaaaggttt gagttccaac acagccttga ctcaacatca   900

gaggatccac actggagaga aaccctatga atgtaaagag tgtggaaagg ctttccgtag   960

gagtgcggca tacctgcagc atcagagatt acacacggga gagaaactct ataaatgtaa  1020

ggaatgttgg aaagctttcg gttgtaggtc actttttatt gtccatcaga gaattcatac  1080

tggggagaaa ccttatcaat gtaaggagtg tggcaaagcc ttcacccaga aaatagcctc  1140

cattcagcat cagagagttc acactgggga gaagccttat gaatgtaagg tgtgtgggaa  1200

agccttcaaa tggtatggaa gttttgttca gcatcagaaa ttgcaccctg tggagaagaa  1260

gccagtcaag gtccttgggc catccctggt cagtccccag tgctcctctc cagccatacc  1320

tcctgttctt ctccagggat cctgttctgc ttcagccgta gctgtgcctt cactgacctt  1380

tccacatgct gtgctcattc ctacctctgg gaattttttc atgctgctgc ctacatctgg  1440

aataccttct tcatctgccc aaatagtgcg tgtcttccag ggtcttactc ccactgtgaa  1500

accttcccca gttattctca ccccttcttc tcactcctca tgagctttat cttggcagtc  1560

ttacggctct tatgcctagc aaatctccag cctaatttta tatatttttt tgagaaaggg  1620
```

tcttgctctg tcacccaggc tagagtgcgg tggtgtgatc ttggctcact gcaacctccc　1680

cctcctgggt tcaagcgatt ctcctccttc agactctcga atagctggga ttacaggcac　1740

gcctcaccac gcccagctaa tttctgtatt tttagaagag atggggtttc gccatcttgg　1800

ccaggctggt ctcaaacacc tgacctcaag tgatccgcct gccttggccc cccaaagtgc　1860

tgggattaca ggagtgagcc actgtgccca gcctccaacc taatttgagt ttcatttgta　1920

ttttttttcat caccttacat gtgttaacag ctgtttcaac ataaactcca ttataatcta　1980

catacaagac ctgtggctac tggtagagaa ttggaataag cttccaacaa tggactgtag　2040

agattaatgg agattgttta gtgggcccat ggctaggtgg ggtattaata cagttgaagt　2100

tatgttgccc ttggcacaga tctttgagaa tctcatacat ctgtgaaaaa gataatgtga　2160

aataaacagt aaaaaaaaaa agt　2183

<210> 563

<211> 2764

<212> DNA

<213> Homo sapiens

<400> 563

agggtgcgtc accggagcag atgcccgggg cggttggagg ctcccgggct cccgctgact　60

catcagaaag gcctgccgcg cggcccgggg ggcggggggaa cgtgggggac cgcggggagc　120

tgccgggcag gcggcagccg aggtcgtttg aggcgcgcag agccggaaaa ccccacggag　180

acggctgggc ggggcggggg cgatcggcac tgaccaggtc acctgcagcg cgggctgacg　240

gcgggcgact gaaggaggga gcaagtctcc caccccagc agccggcggc cgcttccgaa　300

gtctgcccct tccactgcgg agcggcgccc cgcgggcccc cagccagcgc gcccgaggcg　360

cccccgcccc gtgtcgctcg cgctgcgtta ttgggagaag gcggttcctg agcaccagca　420

cgggcctcgg tgacaccgga ggtcgctggg gtcttcccct tcccttaag actctgggtc　480

tgtctgtggg aagagctttc attccccacc ccactctatg ccgaccctct ccggggggagg　540

ctccactggc actgtagaca ccacgtgctg ggtaaaaagg cctggtccca gcgcttccct　600

gtcactgact gctaaccaca aggcgccgtg gcactcagga aatgcggcag ggggggctgga　660

gaactatcag gaagggggtgt gggcagagaa gaggcttcca ccctgtcttg gaacacggac 720

acagtccatg gcattcaaaa gaggtgggag gctcctctgt gcacgtgcct tccgcccccg 780

ggacaggtgg aggaggggat ttgactggtc ctcaccctct gcatttatag tctgggcaca 840

ccttgggcag tgccgcagga gggcgctgtg gagtacaggc acatgcagaa ggtgtggcga 900

gggcttcctg gtggagctgg cagtagggca gggaccttga aaaggaatga tttgaacaga 960

tcggaaaaga cattccagac agaaacaaat gcctgaaacc caaaccgaga agcaggaaag 1020

agcagactgc gttctcggaa tggcagggag tccagtttga ctggaagacc tgaggctcag 1080

aggcgcatca cggcccagat gcagaccaca gaggcaggca cagtggccca ggaggaccga 1140

ggacctggag tcacggggtt ccgcccgctg cccctgggga accgagtcat gccagttccc 1200

agacagatga attccttcca agaattccac agtcctgctc aatcctagcc gccaagcctc 1260

ctggccttgg atggctgctg tctaatgcag atcctctttc atccagattt caaatatttt 1320

tcctattctg tcctttgatc actaacgttt atgtttatct acatcagcat ccctcaatcc 1380

tgacggcact ctgaaattat ctaggggtgc tttaaaaaag aaaaatgttg atgcatggcc 1440

ctcctccagg aaatctgatt ttattggtct ggggtggggc ccaggcatca gcagactttt 1500

aatgagcagt tagagaggag aaccactgat ggagatggtc accagggagt gtccaggtca 1560

gaccgccaca gaagagtgca gcctcctggc cttcagaccc aactgggaca aaccctgaga 1620

acagccttgg cagacctcca ggggcagctg gactccctga ggctggatgt tgcagcctct 1680

cccaggcatc cactctgcag ctgaggccaa agtttccaac gggaagggag ggagagtctc 1740

cgagtctggg ccttgccact cctcactcag catctgacca tccccacctc ctggatctac 1800

agggttcata gaggaggacc cagaagaggg aaagtcaggc tgaggaactt ggcctccctg 1860

ctgcaaggga aatgacatcg gttaccaagg aggtgaccag ctatcctttt ccaagactga 1920

aaagcagaaa tacggccctg aggctagagg gtctaagaga acaataggaa gaatttcctg 1980

acaaaggaca atgttgccta aaggactcag gaagctctgt gaaaacagga gactcccgag 2040

caccagaccc ttttccacca ggcagtgttt ttcccatatg acaggtgaga aaactgaggc 2100

tgagagacat gtaataactt gctgaagcag caaccagcac accatatagc tgaaatctgt 2160

agatcagcag ttaaaagtgg tagggcaagt cctctctgac tttcagcgct aagagcctag 2220

gattctgtgt ttttctgctt aagcctggga atcagagtcc tacaaaagcc gcgcctaatc 2280

ctggggggtgt gggctttaaa cccagagaga aagcatgtta ttggaatact cctgcacttt 2340

tctccctttg aatcccacca cggaaagaaa attctgtgac gtgtacccag tatttattgg 2400

```
agggtatttc ctagcaagaa aatgagggcg attgaccagg cacggtggct cacgcctgta  2460

atcccagcac tttgggaggt caaggtgagt ggatcacatg aggtcaggag ttcgagacca  2520

gcctgaccaa catggagaaa ccccgtctct actaaaaata caaaattagc cgggcgtggg  2580

gtggcgcatg cctgtaattc cagctactcc tgaggctgtg gcagcagaat cgcttgaacc  2640

cgggagacag aggttgcagt gagttgagat caagccatcg cactccagcc tgggcaacag  2700

agtgagactc tgtcaaaaaa gaaagtgtgg tacatctata ctaatggagt actatttagc  2760

cgtc                                                               2764
```

<210> 564

<211> 2491

<212> DNA

<213> Homo sapiens

<400> 564

```
atgtgatgtc ttgctgtggg cagtgccagg cctagtgggc tggcaccaga gcagcttggg   60

gttgggggaag caaccttcca tgaagaccct gtttccaggt agatcccagc cccttggcca  120

agccctgctc ctccgcttgg gtctcaggga tgccatccac cttctctttt gcttcttcta  180

ttttcttggt gaaatagcgg cagggccgcg gggccgctgg aggctagggg agggttgtct  240

aggacagagg aagggcgggc aggcttactg ggggccaagg tcccattgca gagggggccc  300

ctcggttgtg ttcagctgct gggcgccggg gtggaggagc agagtgcttt tcttcaggcc  360

tggtgtttgc caggctggca agcctctgtg ggaagaggtt cccctttgtt ttctgcaggg  420

tgcgtgggag ctccccctgt ggactgaggg tggccacatc ggaggtggga gtgaaggagc  480

tcagggacac acaggacatc tggagtgttc tcagtgaacc caggtaaatg gcctcctgct  540

tcctccacgg ctgtcctgag ctgtaatacg atctcaggtg gcaatgccaa ggagcaggag  600

gggagggggc atgaatgtcc aggccctcag gctgtttgtc caagacccga tcttccactt  660

gggaccactg tctgaacaca gcactcacta cccacaacct caggctggag ggcgaggtgc  720

catgagcatc gcagatgctc acagggcatg tctgccatgc accagacagg caggggttca  780

ggggcacata agtcaagaaa ccccagtctg cagcaggtcc actgaggcag gagaacagca  840
```

aggcagctca gaagtgactt cccattgaga cctggggatt aggatccatt ctggtttgtc　　900

cttccccatg aaaatagaca atgggaaaaa accagggacc aagaggtttg caggctgagt　　960

ttctgtctgt gctgtgggct gctctgacag gtgtgtcctc agagcctttt atgggctacg　　1020

cttgtgactc aggcagcaca agggactccc cagttccctg catgggaggt ccctctgacg　　1080

ggaagtggtg cctggtatcc agtttgcttt cgtatcagtt ccttttgcat ccaacgactc　　1140

cagtacctca agatgtggca ggaaaagccc ttcctagaaa cttttggtgt gttgggcctt　　1200

tgctgctcag accttgtgga gtgcctgagg atcagtggga gaggggtggg tgcccctgag　　1260

ctggaaggcc cccagccagt gctgaggaaa tgtgggtgac acagaacagg caggtaacag　　1320

gccagtgcca ttctctgccg gacttccacc tccccgacga cagcagcact ccgttgtgtt　　1380

agacgccacc aggcctcctt gggaccctgc cttggggtgc tcacgtggga ggactcttgc　　1440

ctctgctgct gtcgagggga gccctcccct ctgggtctgt aggctgcaga acacgccaag　　1500

gggcactgca gcatggaggc aggctggaag gttggggagc agaggctgca gggagtggag　　1560

ggaaaaagat ttaaaggaga ctgaagtaaa aggaagaaac ctaattcagt agttctcaac　　1620

aggggggtgat agcaccccac gggggacact cgccaatgtc tgggtgcatt tttggttgtc　　1680

acagctggtg gttgctacag gcatctggtg ggtcgaggcc aggatcttgc tcatcatctt　　1740

acaatgccca gggcagccct gccacagaga atgacccagc ccccaatgtc cacagtgccc　　1800

gggacgagag ggactgattg ggctccaggg agtggctgag ctgggagga cacgggcctc　　1860

atttacctcc acttgagctc tgcaggaaaa ctcctccttt gactgggtat ttctgcagtg　　1920

gaaaagcccc atttttaatt ttcttgagct gtgactagtg gtgcacaatg tggccagttg　　1980

gcctttgggt gagtttggaa aatggaaagg ctcatatctg ggctctgggc cctgacttta　　2040

ccttgtctat gtggagcact ctcatgcttg cattccccac cctctcagct ctcacggcag　　2100

aagtggcatc tcgccgcctg ggagctgtcc ctcagggggt tgggcccgca tgggctcctt　　2160

ccagccttcc atgggatcta tgggtgggca gagcacaaaa tagccaggtg aggctgggcg　　2220

cggtggctca ttcctgtaat cccagcactt tgggtggccg aggagggcgg atcatgaggt　　2280

cgggagatcg agaccatcct ggctaacaca gtgaaaccct gtccctacta aaatacagaa　　2340

aattagccgg acgtggtggc gggcacctgt attcctagct acttgggagg ctgaggtagg　　2400

agaatggcgt gaatgcggga ggcggagctt gtagtgagcc gagatcgtgc cactgcactc　　2460

cagcctgggc aacagagcaa gactctgtct c　　2491

<210> 565

<211> 2691

<212> DNA

<213> Homo sapiens

<400> 565

aaaagagccc	gggaccagcg	cagagggcct	gatgcctgat	ctgtcaagtc	tgtccgaccg	60
tgcctgtctg	ctgtcccccc	agctgttcca	gtggtggatt	ggcaggaccg	ggtgcctacc	120
cggtactcct	taccaaagga	gcccctggta	gtgcccacct	agcccaggac	aaggagtgga	180
acgggagctg	cagctgcagt	ggtcacgaag	gcagcctgga	ggaggtggcc	atggaggata	240
gccttcgtta	tcgtcagcct	ctgccgcata	accgcgaatg	aaccaaagag	aacccgaagc	300
cggtgggaac	tcagcgcagt	ctcaccctgc	ccctcgggaa	ccgcttctca	gcagcggcag	360
ccgaagtctg	acgacgctta	gcaaccgtta	ccttgacaac	gcaatcctat	cgcgcaccat	420
ggagtgcggc	gcccctctgc	atcccagaag	gcaccgcgct	gtccctaagc	cttccgcccc	480
tctccgtccc	aacatgcaac	gaggctcaca	gtcaatgaat	cgtcatcagg	tatgaacgag	540
gctcggccac	caactacatc	acccggaaca	aagcccggaa	gaagctccag	ctgagcttgg	600
ctgactttag	gcggctgtgc	attctgaagg	gcatttatcc	ccatgaaccc	aaacacaaga	660
agaaggttaa	caagggttct	acagcagccc	gaacgtttta	ccttatcaaa	gacatcaggt	720
ttctcctcca	cgaacccatt	gtcaacaagt	tccgtgaata	caaggtgttc	gtccggaagc	780
tccggaaggc	ttatgggaag	agcgagtgga	acactgtaga	gcgtttaaag	gacaataagc	840
ccaactacaa	actcgaccac	atcatcaagg	aacggtatcc	cacgttcatc	gatgccctgc	900
gggacctgga	cgatgccctc	tccatgtgct	tcctgttttc	caccttcccg	cggactggca	960
agtgccacgt	gcagaccatt	cagctgtgcc	gccggctcac	tgtggagttc	atgcactaca	1020
ttatcgctgc	ccgtgccctg	cgcaaggtct	tcctgtccat	caaaggcatt	tactaccagg	1080
ccgaggtact	ggggcagccc	atcgtgtgga	tcactcccta	tgccttctcc	catgaccacc	1140
cgacagacgt	ggactacagg	gtcatggcca	ccttcaccga	gttctacacc	acgctgctgg	1200
gctttgtcaa	cttccgcctt	taccagttgc	tcaacctcca	ctatcccccg	aagctcgagg	1260
gtcaggccca	agcagaggca	aaggccggtg	agggcaccta	cgcgttggac	tccgagagtt	1320

gtatggagaa actggcagcc ctcagtgcca gcctggcccg cgtggtggtg cctgccacag　1380

aggaggaggc cgaggtggat gagtttccca ccgatgggga gatgtcagcg caggaggaag　1440

accgcaggaa ggagctggag gcgcaggaga agcacaagaa gcttttttgag ggcctgaagt　1500

tcttcctgaa ccgagaggtg ccccgtgagg ccctggcctt catcatcagg agttttggtg　1560

gggaagtgtc ctgggacaaa tctttgtgca ttggggccac ctatgacgtc acagactccc　1620

gcatcaccca tcagattgtc gaccggcctg ggcagcagac ctcagtcatt ggcaggtgct　1680

acgtgcagcc ccagtgggtg tttgactcag tgaacgccag gctccttctc cccgtggcag　1740

agtacttctc tggggtgcag ctgcccccac acctttcacc ctttgtgacc gagaaggaag　1800

gagattacgt tccacctgag aagctgaagc tgctggctct gcagcgggga gaggacccag　1860

gaaacctgaa tgagtcagaa gaggaggagg aagaggacga caacaacgaa ggtgatggtg　1920

atgaagaggg agaaaatgag gaggaggagg aagatgcaga ggctggttca gaaaaggagg　1980

aagaggcccg gctggcagcc ctggaagagc agaggatgga ggggaagaag cccagggtga　2040

tggcaggcac cttgaagctg gaggataagc agcggctggc ccaggaggag gagagtgagg　2100

ccaagcgcct ggccattatg atgatgaaga agcgggagaa gtacctgtac cagaagatca　2160

tgtttggcaa gaggcgaaaa atccgagagg ccaacaagct ggcggagaag cggaaagccc　2220

acgatgaggc ggtgaggtct gagaagaagg ccaagaaggc aaggccggag tgagtgcctg　2280

cggcccctca cagggctgag gccagcccct agcagctgga tgtggcagag gcaggccaga　2340

ggacctaagt gtgatggacc agagtcactt ctcctcctcc tttctccagc cagccctgac　2400

ccctcatgct ctctggctgg gccagtgggc agccctcgct tcccttggat ggagctgccc　2460

tgctggtgcc tggtcagaga agaggcctct gtgcccagcc tgattctctg ctcccaggag　2520

ccagtgacat gaggtgcaga ggcccaccca gcccccctacc tactgccccc attcatcctg　2580

gctttccaca gccccctccc acacagttgg acccgtgatt ctcagggtgc tgtgatgggg　2640

tgagggtagg gggagcattt gttattaaat gactggactt tcgtgccaat t　2691

<210> 566

<211> 3204

<212> DNA

<213> Homo sapiens

<400> 566

```
ctagtgctca acgtcttcta acacatcaga cagcccccca caaaaaaggg tttcctagcc      60

taaaatgtca ctactgtgag gagaaaccct gctttagaaa atgtgtatat acacaccgat     120

agaaaatgag tggtctgtaa gttcaagttg ggccttggga tcatggccca taggaggcct     180

cagatggcag gcatggtgga agggatggag gcacgtgcct ctctggacca aggcacagac     240

gaaaggcagc ctctgggagc aggggttcag ttcagctggt tgccacacca gagagaagag     300

tgggattaga attcaggcca caaacagagc tgcagtgtgg tcttcgaaga cttgttgttg     360

tagttctgca gcagttgctg ctatgcatat gcttagggat atgccacctc cttcagaaag     420

tggccttaat cctccaaatg ggagtgaatc tccccacatc agtgctcagg ctgtgggtct     480

gaggccttta ttatcttacc cactaataca tcctgccatt atgtcccaga gtagacggta     540

agtttcctga ggatgagact catgcatttt cacctatctc catagtacca cggcatgtag     600

caatactgat aaaatagttg ctgaattgtc atcaatattt attcttcctc ccaatattag     660

aaattccatg tgcatacatt tgaacaaaac atataaaatg ttaaggtaaa aaggaagtaa     720

tctactattt tcttctggaa aaatcattta gcaaagccca tcttcaaaga tttgtttgta     780

cttttttttca aagctaataa tctgtttgac tgccttcccc acttctttaa cgtttttagt     840

agtttccagt ggtaacatgg ttcatcttga aatttaacta ctgcatttca taaatgggtc     900

ccaatttggt taatgttttt acacacaaat acctataatc aaagcatgga gcaaattttg     960

cctattcttt gctatacaac tcaaaaaga attttttaag ctctataatt cattagtttg    1020

ctaatggctt ttccccataa gagatagttt gaccctgctc aacttttagt tacagcaaaa    1080

aaactcattc aggctttctc tctgctcttc atattcaaaa taaaccattc tatagactga    1140

gaaggaatca agcacttttg gaataaaagg caattttcca tgataaaaca ttctgagcac    1200

gtttagtacc ttcctattct ttacattcct aaaatgtaag aaactcatct ccagcaatcc    1260

aaatatctta aactccactt acaaaacaaa tcaaggggtt attcttcgcc ctacaaaagc    1320

acttatcaaa agattcaacc caagattatt ttcattcagc agcacctact ctcaaaccca    1380

tttcaattta gatagtattt acacagcttt tcatgaacca gagctttcta agagctaaga    1440

gggaatgatg aatgagttct gccccttaat tctgcaagtg aggaaactga ggctcagaag    1500

accatatgaa ctctccaagc tgcaggataa cagctgggac ttatcaaggg cccagggctt    1560

ctcacatctt caccacttcc accatgtcaa ggccaccatc acgtcttgtt tggaatgcta    1620
```

```
taggaatctc ctaggtccca tttttaccct ccctcctatc atccaccctc tctccaaagg   1680

ccactccata cagcagcatg tggatgaatc tacaatagaa ggcaaactat gtccctcctt   1740

tgctcagaaa cttttaatat cttcctattt ccccatgtaa aagccaatcc tcaaccacag   1800

tgtagaaggg ctatccattt ctagctacac atctcctcag tcactgcccc cagccccagt   1860

acttggggac tttgcccttg cagttccctg tgccagcaaa ctcttcctcc agatgtccac   1920

atgactcacc cccctccttc aggggtcttc tcaaatgtca ctttaccaga ggtggcttcc   1980

ctgaccatcc tgtataaata gcatcaccct acctcctatc tctctctcta ctggcttttt   2040

aattattttt attattattg agacaggttc tcactctgtc acccaagctg cagtagagtg   2100

gtgagatcac agctcactgc agccttgacc tcctggcttc aagtgatcct cccacctcag   2160

cctcccaagt agctgggact acaggtgcac accaccacac ccagctaatt ttttttttta   2220

tttttgtaga gacagagtct ctctgtgttg cccaggcctg tctcaaactc ttggcctcaa   2280

gtgatcctct tgcctcagcc tcctatattg ctgggattat aggcatgagc caccgcacct   2340

ggccttatta cttttttccta acacttttgt cacccgacat attttgttta ttgatttcct   2400

ttgcccacta gaatgtaagc tcagcaaaaa agtagcctgc tggatcccca gtgcctggta   2460

tacagcaggc actcagtatt ttggtataat aagtgcttac tatgtcccca atactgtttt   2520

aaggaaggta tttacttaat cttcccaata tcctgagata ggcattatta tcatcattgt   2580

catctctgag tcacagatga agaaactaag gcacagagaa gtttagtaat ttttccaaga   2640

tcacacagct agtgaatagt agagccagga tttgaacgcg agacaccggc tctttaacca   2700

ccatcacatg tagtgtcacc cttattgtgt cactcagtta atgataaaga actactgcac   2760

tttaatgctt cttctctata ccagactctc agaaattgat acatactaaa gtatgctttc   2820

aaatgtcaat catttcctat aagtgcctaa cattttaaag taataaagtg tgattttgag   2880

ctaagactgg taaacaaagt gtgctgcagc cacaagcgta ctgcgcttta gcctctatct   2940

agttcaagaa ccacttccag aggatatgag tgaggcttac aggcgtgtgc aggtaattct   3000

ccctgctcaa ctgagattac catcattagc tctggtccat aaagggaaaa ctaagacaca   3060

aaagccacat tgatgttcta ggccacacag ccaattgcag tgactagaag aaagaagcct   3120

ccccgggcgg cgaaggttgc agtgagctga gatcgcgcca ctgcactcca gcctgggcca   3180

cagagggaga ctccgtctca attt                                         3204
```

<210> 567

<211> 2288

<212> DNA

<213> Homo sapiens

<400> 567

tgccatagct cccttcagga gctcaagggt tccaaatgat gacatggaca ttttctccaa   60

agccccattt gtctccaaga gcagtatggc tccttcccag ccagaggagt cagacgtgtt   120

tttgagagct cctttcacta agaagaaaag catggaggag ttaacagtta tccaatgcac   180

ctcccaggag ctgcctgcac agaccggtct cctcagtcag acaggtgatg tccccctgcc   240

cgcgggccgt gagagagctg tgtacacctc tgtccaagct cagtattcca cagctggttt   300

tgtgcaacag tctaacctcc tgtcccattc tgtacaagca gcagaccatc tggacagcat   360

ctctcccagg ggatcctgcc tggaatctgg gggtcattct aatgacagaa acaaaggacc   420

tcagctccag aaagaagctg tctcaggccc catggctggc aaaccattcc gcccccagtc   480

cttatccaag tattcccgtc actatagccc agaagacgag ccaagtccag aagcccagcc   540

cattgctgcc tacaaaattg tttcacaaac caacaagcag tcgatagctg ggtctgtttc   600

tatcacatcc ctttcctcca ggactacgga gctgccagct gctgatccat ttgctctagc   660

acccttccct tcaaaatcag gcaagaaacc ctaggagcaa aacctgagcc tcaagcctct   720

tgtctctatc ccaccctcaa tacccgccat ggcactccca gcttagcctt ctgaagaaga   780

aatattatca gttcttatat ttcaattccc tgcgtcagag cagaatttct tgagtcaaca   840

aactcagttg cagtgatatt tagttgaagc ccctttaagt tatgttcatt tttgtttgtt   900

tgtttgtttg tttatattga tttctggact tggaggcatt ttcatctcct tcacagaggt   960

catccacttc caccaagaac tctgctttcc ccccgcccca cccacagaaa ctgtttaaat   1020

cctgaaatac ttcttcaccc caatcccaaa ggggccctat tgttgctagt tttaattcct   1080

gtagctcctg ttctaagtca tgcccatcga agaatcaaga ttagtccctc cactaaatca   1140

agatttagta ctcttgaaaa ggggagatgt ctggaaagaa gagcaagata aaaaccctgc   1200

acatcaacag gaagtataat cctgcagtta ctaataattc ctgtagaagc agcagctcta   1260

ggagtctcca gatctgattc tcagtctgtg tgcaagccag gctggctctc gtgcatgact   1320

gtctatgggt gtggaatgta cgtcagagcc tgtgtagaga tacaggcaga tgggctaact   1380

```
cctcatgtct agtcatgctg gcagggcttt ccccacatcc atgcttttga aattagtgtg   1440

agtgtacagg tttgtgtgtg catgtatacg tgtgtgtgca caggaagcat ttccacttga   1500

gggaaatcct gccccatcat gcctacctcc acaatgaaat cactcgtttt ttggtgtttg   1560

ctcgcctaac tgacttgaac cccattttat ttatttagtt tttttctcat ggcaaagtag   1620

aatacgttgg aaggtgtagg gaaatcctgc tggaactggt gtttcagagt aaatcttttt   1680

tctctccgga atttcttgtt ttgctattaa caaattatat ttacctgatt atgaaaaatt   1740

aattttcctt atacattttc cccttacaac actagaaaag agcaccttgt tacagttccg   1800

gcctctcagt atgtgggcta aatgccagca ttagggaatt cattaatcat gagactaggc   1860

tacaaactag gcttgcttgt tttggggtgg ttttgttgtt gttgttgttg ttgttgttgt   1920

tgtttccaaa tctctactgc cttttgagga aatgtaaatc tgagacatgg aaataagtgt   1980

ttgggagaat ggaaaagagc tgaatcaggt aggcatgaaa acttttacat tctctatcct   2040

ctttagatgt tgaaataggc cagacaggtt aactgatgtt ttttaaaatt gtcttttatt   2100

tctggaaaga tctgacttat tcctagcttt tttcataccc tttattatta gtgccttaaa   2160

ataaagctgg ccaggtgcag tgccacacac ctgtaatacc agcattttgg aaggctgagg   2220

caggaggatc agttgagccc aggaagttca agaccaactc tggcaacaca gcgagaccct   2280

gtcccttc                                                           2288
```

<210> 568

<211> 3179

<212> DNA

<213> Homo sapiens

<400> 568

```
atctatggag acggcaatat ggaggcgatc ttacatttct ttgatttcat ctgaacgtcc    60

agttcacaat tggagtgatg tttaccttaa ccggttgtag actggtggag aaaacccaga   120

aggtagagaa tccatcagtc tcatttgcct cttctttccc ccttattcct cttctcctaa   180

gaggcaagag tgttcagaag aaacaagcag agagtaaaag ccagataaag ctccatactc   240

agagtgctcc ctttggactg tgtcccaagg acctgatgct cacccaggct ccaagctccg   300
```

tcgtgaggtc caggaacagc aggaaccaca ccgtgaactc tggtggatcc tgcctgagtg　360

ccagcacagt ggccatccct gccatcaacg acagcagtgc agccatgagt gcctgcagca　420

ccatcagcgc ccagcccgca agctccatgg acactcagat gcgctcccca aagaagcagg　480

agagagtgaa caagagggtc atctggggca ttgaggtggc tgaggagctg cattggaaag　540

gctgggagct aggaaaggag accacaagga atctggttct gaaaaatcga tccttgaaac　600

tccagaagat gaagtacagg ccccccaaga ccaagttctt cttcacggtc atccctcagc　660

ccatcttcct gagcccaggc ataaccctca cgctccccat cgtcttccgg cctctggagg　720

cgaaggagta catggaccag ctgtggtttg agaaagcgga ggggatgttc tgtgtcggcc　780

tacgggccac cctgccctgc cacaggctga tctgccgccc accatccctg cagctgccca　840

tgtgtgctgt gggagatacg actgaggcct ttttctgcct ggataatgtg ggggacctgc　900

ccaccttctt cacctgggag ttctccagcc cattccagat gctgcccgcc acggggctcc　960

tggagccagg ccaggcctct cagatcaagg tgacctttca accccttaca gccgtcatct　1020

acgaggtgca ggccgcgtgc tggtacgggg cgggcagccg gcagaggagc agcatccagc　1080

tgcaggctgt ggccaagtgc gcccagctgc tggtgagcat aaagcacaag tgcccggagg　1140

accaggatgc cgagggcttc cagaagctgt tgtactttgg ctctgttgct gtgggctgca　1200

cctcggagag gcagatcagg ctacacaacc cgtcggcggt aaatgccccc ttcaggattg　1260

aaatttcccc ggatgaactg gccgaagacc aggccttctc atgccccacg gcccatggca　1320

tcgtgcttcc gggagagaag aaatgtgtgt cggtgttctt ccaccccaag actctggaca　1380

ccagaactgt ggactactgc tccatcatgc cttctggctg tgcctccaag accctgctta　1440

aagtcgttgg tttctgtaga ggccctgctg tgtccctgca gcactactgt gtcaacttca　1500

gctgggtcaa ccttggggag cgctccgagc agcccctgtg gattgagaac caatcggact　1560

gcacggccca cttccagttt gccatcgact gcttggagag tgtctttacc atcaggcctg　1620

cctttgggac gctggtgggc aaggcccgta tgaccctgca ctgtgccttc cagcccactc　1680

accccatcat ctgctttcgg cgtgtggcct gtctcatcca ccaccaggac ccactgttcc　1740

tggacctgat ggggacctgc cactcggaca gcaccaagcc agccatcctg aagcctcagc　1800

acctcacctg gtaccgcaca cacctggccc ggggcctgac gctctacccc cctgacatcc　1860

tggatgccat gctgaaggag aagaagctgg cacaggacca gaacgggggct ctcatgattc　1920

ccatccagga tctggaggac atgccggccc cgcagtaccc ttatatcccc cccatgaccg　1980

agttcttctt cgacggcacc agcgacataa ccatcttccc cccgcccatc agtgtagagc　2040

●

```
ctgtcgaggt agacttcggt gcctgcccat ggcctgaggc ccccaaccct gtacccctgt  2100

gcctgatgaa ccacaccaag ggcaagatca tggtggtctg gacgcgaagg tctgactgcc  2160

ccttctgggt gactccagag agctgcgacg tgcccccact caagtccatg gccatgcgcc  2220

tgcacttcca gccgcctcac cccaactgcc tttacacggt ggagctcgaa gccttcgcca  2280

tctataaggt cctgcagagc tacagtaata ttgaggagga ctgcaccatg tgcccatcct  2340

ggtgcctgac ggtgcgggca cgaggccaca gctatttcgc tggctttgag caccacatcc  2400

cccagtattc cctagatgtc cccaagctat ttccagcagt gtcctccggt gagcccacct  2460

accgcagcct gctcctggtc aacaaagact gcaagctgct gaccttcagc ctggccccc  2520

agagaggctc agacgtcatc cttcggccca cttcgggcct tgtggcaccc ggggcccacc  2580

agatcatcct catctgcacc taccctgagg gcagctcctg gaagcagcac actttctatc  2640

tgcagtgcaa tgcttccccc cagtatctca aggaggtgag catgtacagc cgggaggagc  2700

cactgcagct gaagctggac acccacaaaa gcctctactt caagcccacc tgggtgggct  2760

gctcctccac cagccccttc accttccgca acccctcgcg tctgcccctg cagttcgagt  2820

ggagggtctc tgagcagcat cgaaagctgc tggctgtcca gccctccagg gggctaatcc  2880

agcccaacga gagacttacg ctgacgtgga ccttcagccc tttggaggag accaagtacc  2940

tgttccaagt ggggatgtgg gtctgggaag ccggcctgtc cccaaatgcc aaccccgctg  3000

ccaccaccca ctacatgctc cggctggtgg gcgttgggct caccagcagc ctctctgcaa  3060

aggaaaagga gctggccttt gggaatgtgc tggtgaacag caagcagtcc aggttccttg  3120

tcctcctgaa tgacggcaac tgcacccctc tccaccgcca gtaaaagcat ctagtcttt   3179
```

●

```
<210> 569

<211> 3446

<212> DNA

<213> Homo sapiens


<400> 569

gggctgtcgg ggggtcgaga cagtggagtg ttcctgatgc cagctcacgg agggaatcca   60

gggaattagg taatgaacgg tctacccatg aaggggaccg attagtgcct ctcgcctggt  120
```

cctgaagacc tttaaattat tctttcagct gatgccaaga gcctcttttt ggccagcact　180

tactaagcac cagagacaca gcgagaagca gaagcatacg agcacatcag tgtgattctg　240

ctgtgatgaa gggcaagaga gggctcactt tccggcgtga cattcaagct agccccgagg　300

cctgagcagg acccgcccag gggaagatct ggaggaaagc catctgaaca tacaacaaga　360

gcaaaggcct ggtggagtca agaccacctt ggctgccagg tggaatggtg gaataactca　420

ggagtctgtc aggtctctga gatgtcaaac gggcttggca cacacccagg agctcaatgc　480

tgctgggagc tgagcagctg ggagcaagga gccctcatcc ccactgatga agaggccagc　540

ccaggttcta ggctaagcag gcctgtgatt ataaacagca gtgtctccct ggacaagttt　600

cttgaccctg agaagaatgt tagaccatca actttgtgag gggacaggca gtctccaact　660

ttttttcctgc tcagtcctta ttgcatactc ttggagaagg tctactgact tgttctcaga　720

tgccccacgg ctcagccaac cacccatcca gcagagcatt caaaaggcat cgggaaggaa　780

tgagggcgac cgttctgcca ggcccctatt tttttttgaga ggagtctcac tctgtcgccc　840

aggctggagt gcaatggcat gacctctgct cactgcaagc tctgcctccc aggttcaagc　900

gattctcctg tctcagcctc ccaagtagct ggtactacag gcgtgcacca ccacacccag　960

caaattttttt ctatttttag tagagatggg gtttctccat gttggccagg atggtctcaa　1020

tctcttgacc tcgtgatcca cccgcctcag cctcccaaag tgctgggatt acaggcgtga　1080

gccaccgcac ctggcttttt tttttttcctt ttagatggag tcttcctttt gtcgcccaag　1140

gtggagtgca atggcacgat ctcagctcac tgcaacctcc acctcccagg ttcaagcaat　1200

tctcctgcat cagcctcctg tgtagctggg attataggca cctgccacca tgcccagtta　1260

atttttttgtat tttcagtaga gacggggttt tgccatgttg gccaggatgg tctcgaactc　1320

ctgacctagg gatctgcccg ccttagcctc ccaaagttct gggattacag gcgtgaggca　1380

ctgcgcctgg ccattttgtt tgtttggggtt tgtttttgag atggagtctt gctctgttgc　1440

ccaggctgga gtgcagtggc atgatctcgg cccattgcaa gctccacctc ccgggttcat　1500

gccattctcc tgcctcagcc tccagagtag ctgggactac aggcgtgcgc caccatgccc　1560

agctaatttt ttgtattttt tagtagagac ggggtttcac catgttagcc aggatggtct　1620

ggatttcctg acctcatgat ccgcctgcct tggcctccca aagtgctggg attacaggcg　1680

tgagccacca cgcctggcct gtttgttttt ttgagacaca gtcttactct gttgcccagg　1740

ctggagtgca gtgacgcgat ctcggctcac tgcaacctcc acctcccagg ttcaagcgat　1800

tctcgtgtct cagcctccca agtagctggg attataggtg cgcaccacca cgcccggctt　1860

```
atttttttgta ttttttagtgc agatgggggtt tcaccatatt ggccaggctg gtcttgaact  1920
cctgacctca ggtgatccgc ctgcctcagc ttcccaaaat gctgggatta cagcatgagt  1980
caccacgccc ggccaagaaa gacccatatt ttgtttttgtt ttcttttttg agatggagtc  2040
ttgctctgtc gctcaggctg gagtgcagtg gcgcaatctc tgctcactgc aacctccacc  2100
tcctgggttc aagccattct cctgcctcag cctcccgagt agctgggact accggcgcac  2160
accaccacgc ctggctaatt tttgtatttt tagtacagac agggccagac tggtcacgaa  2220
ctcctgacct caggcgatcc acccgcctca gccttccaaa gtgctggaat tataggtgtg  2280
agccatcgca cctggccacc agaccccccat taacttcagt agggatggca ccaggtttga  2340
gaggccaaaa gagatccaga gccagcaaac aagacttagg tttgattgag gggaatttgc  2400
atacagagca gtccagtgga ggtgggctag ataggagaac tgccccacct gcagaaagta  2460
tgcagtatat atagcatttt cacttaacac cctcccccta acaactttga tttaacccaa  2520
aacaaagggg ctaaatcccc tgtacatcca caggacagaa tggggggctca gatattcctc  2580
atgggtaagt aatgaatctc tggcttgtcc tcacttggaa ctcctaacac attcaggtgc  2640
atctgccata cagggtcatt ctcagagtat gcttaagtta ttgctgtcag gtgcagctac  2700
catacacagg tgtgtctgcc atatagccac agaaagcagg agtcctacag ctgctcctca  2760
tgggtctcca tagactagtc ttagagcaag gatgggcagc cagcctccag gtttaacctg  2820
gcactctccc ccagcacttg gtccccagag caggggtgca tctctcccac ttctggtcaa  2880
cccttcagta acaagtagag cccccagggt cttcatgaat atctagttga actggctaaa  2940
gaagagggcc ctgtaacagg acagaacacc aggagcctga accccgcatc ttctaccctt  3000
atcctgcatt tatcctgcct gcattcaagc ctgtccagct gcaccactgg aggttaccat  3060
ggcaactaaa cccagaggca gccggtaact gagatacagc tgccaagagc aactgatggt  3120
ggaaaaggcc aacagcagag actcttagaa ggaagagaag tacacaggag gaggccccag  3180
aaccctgagg gtgctacact caaatctaat cctactcaca actcagcagg cagtcaacgt  3240
cttgcacaaa ctgccatatc accaaccaga ggcacagata tggacacaat ggggccaatt  3300
tgcagagatg tttgcaacta tggatgcaga gtagcacagg tgggacacat gttgtttagc  3360
ccaaaagcaa cgggtcttgg tgaaaacgaa aatgggtagg gtaccattgc tgtttccaat  3420
gaaacaatga attttgtgtg ctcttg                                         3446
```

<210> 570

<211> 2907

<212> DNA

<213> Homo sapiens

<400> 570

agtgctgtcg gagggttgct ggggaaagga gattggctgg cgaggaagat gaggaatgtg   60

ctgccaggag actgggatca cggccagatg ctaattacga tggcctgggg gtgctggtac   120

cccctgtcag catcatatca gcctctccac ttcaaatcct gcccctctga tgttagaatc   180

tggctgcaac catcccgtga ttctgtggag cctcgtgcct tacttctgct ggcttctgtc   240

tgtcgtcact tccgttctcc accaccctgg cctcaatcaa acacgttttc tctgatgcaa   300

aactcgacct tcatttacag aaagggttat ctcaagaggc ttgggatggt taaaccctgc   360

acatctcaga ggaaggactg gctcttcacc tgttcctgca ggataactgc taacggctta   420

aaatattctg cctgataaga gggcttctgt atatctgggg ccttgggcca tgccgggtag   480

ttgatgctaa caacatgatt tatggtgggt gcctgcggtc atgctgtatc agcctgacct   540

ctggaggggc tggacactgg gtaactgatc cccaagaaaa gccatggaca ctaaggctca   600

ggtgagttcc cctggttggc agtgttttgc gtgtgttgtc acacatcatt gctgggagac   660

ttaagcactg cacatatgac tatctaggag ggtacagctg caagctcctg cctggattct   720

gccctgagca cctttttcct ttgctgattt tgtttatcta tttatttatt tttgagatgg   780

agtctcgctc tgtcaccaag gttggagtgc ggtggctgga tctcggctca ttgcaacctc   840

cgcctcccgg gttcacgtga ttcttctgct tcagcctccc gaggagctgg gattgcaggt   900

gccaaccacc atgcctggct aattcttgta tgttagtaga cggggggttt tgccgtgttg   960

gccaggctgg tctcgaactc ctgagctcaa gtgacaaggc cgccggcctc gacctcccaa 1020

agtgctggga ttacaggcat gagccaccgc gcctggcccc tttgctgatt tttaatccgc 1080

atccttccac tgtgttaagc tgtaactgtg aatacaacag cttttttgag ttctgcgatt 1140

ctttgcagca aatcgtcata cctgagcgtg tcttggggac tccccgacac atcttcccac 1200

tccctcttct gttttctcac ttcctctgga gtaaactgaa agaggcccct gcttgcctct 1260

tgcaaggcag ttctgaacac actgagatca tttgtgatct catatcctct tctaagcaat 1320

tcatcaagaa atttctttca aataaaccca gtgctcttca tggaggtgat gctgatgaaa 1380

```
atgactttct ccagcttatt acacgtttgc agaagctcct gtttaagagt ttgagcatgt  1440
atgtgtgtgt gcatatacac cagcacacac atgcatgccc acagctgtca tgccttcacc  1500
agaaccagga cgaggagtta ttctattgcc agaattgaag aaccatttcc acatattgta  1560
aggtcagtga aagtacaatg aaaaatacac ctgctagcat gcctatgcat ggcctctctg  1620
caaataagat gaaggtccct tcaccacctg cttgcactgc taatggccct gtagattcca  1680
ctggatggat ttgtaatttt ctcaaccatt tccctaatg ctggatattt gggttatttc  1740
caacattttt acgcttccaa ataaggcacc cataatgatt cttgcagagt aatcattagg  1800
ctcttctata attatctaat tatccttttt tttttgtttt tttctgaggc agggtcttgc  1860
tctgacaccc gggctggagt acagcggcac gatcatggct cactgcggcc tcagcctccc  1920
acgctcaagt gattccacag tctcagcctc ctgtgtagct gggatcgcag gtgtgcgcca  1980
ccacgcctgg ctaacttttt gtactttta tagagacggg gagttttttt gtattttttt  2040
aaatagagac gatgtctcac catgttgctt aggctgttct ggaacttctg gactccagta  2100
atcctcctgc ctcagcctcc caaggtgctg agactatagg catgagccac cgtgcccagc  2160
catataatta tcttaagata aatttctata catggaattt ttatacgtgg aatttctata  2220
catgaattaa agagcacaga tttttgtatg ttggttgctt ggttttaga ggcagtatct  2280
cactccattg cccaggttgg agtgcagtgg tgcaatcata gctcaccgca ccactgaatt  2340
cctgggctct aggagtcctc cttcctcagc ctcctaagca actaggacta cagagtacat  2400
atgtttttaa gatctttgat atcttatacc ttttggggac tgtatcagtt aaaaactcta  2460
ccagtactgt agaaacatga tcgtgtctct gtttccttgc cacactgggc attaattact  2520
tgatccatta atgagttaat tgcaccctca ataagagtat ggtaaagtgt gacacattta  2580
cactacagaa tattatgctg taaagaataa ggatgtaggc caggtgaggt ggctcatgcc  2640
tgtaatccca gcactttggg aggccgaggc gggcggatga cgatgtgaag agatcgagac  2700
catcctggcc aacatgttga aaccccgtct ctactaacag tacaaaaatt agctgggtgt  2760
ggtggcaggt gcctgtggtt ccagctactc gggaggctga ggcagaggaa tcgcttgagc  2820
ctgggaggcg gaggttgcag tgagccaaaa tggcgctact gcactccaga ccggggacag  2880
agtgagactc tgtctccaaa acaaaac                                      2907
```

<210> 571

<211> 3081

<212> DNA

<213> Homo sapiens

<400> 571

```
atcataagaa actacctcgc tattttctgc caccttaaaa gttagtgtct tgcgtaagag    60
tttttatttt tccattttag gaaatgctaa actttttcct cacatagaaa tggtcatttc   120
attttaatta tgctggattt ctgccaggga aaagtaaaac taacctggga atttgcatgt   180
gccatgcaaa aagaattgat tccatgggtt agactggtta gaacgatatg tgaaaataga   240
ctgaggggaa aaacagcaat gtttagcaag agtgtttggt tacatgtgga gaggtggaat   300
ggtgaacctc tccaagcaga ggtggccttt gggatgagcc acagcttaaa aaccgtgaga   360
tctcaaacac atctctgtgt caccctgagt ttccattttt tcaactctaa attgagcatc   420
tttcccctgc taggataatg taagaatcag agacaacttc tggaaagcat ctagttggac   480
acttggcacc taagcaggca cttaaaagag aagctgttag gttctggcca ggtttgaagg   540
caggaacatg ggccatgttt tagataacaa atggaaagac tttactatga atttctacat   600
agaactaacc ccaaacatgc tgtagaagtt taggatttag tcaacaggca ttactgtact   660
ggggggtgcca ttaaagggct ctccagcctc tgcccaaggt agtggaaacc ctgtcttctc   720
tcctctatca gggttggtgt ttgccttgac tgctgagttt attggatcct acttcctgtc   780
ccaccctgac ggagcatgaa ctgtgaatgt ttagattctg tcttcctctg agggagacca   840
gaagggctcc taattttggt aaaacagtaa atttagtcat tatagccatg tgcctggcat   900
catttaagaa cctccttgtc agcacccctt aattttttcca atttgttagc ctggaaaaca   960
cccctattag tatcaaactt aagtcttaat gaggggaaat aagaatttac ccctatcgtt  1020
cccaaaatga agacagagat ctgtatcttt ttaaacataa tgggaggtat ctgtgttatt  1080
gtttaaaatc aattatcctt tattccatgc tttttttttc tattgtttat tttatctgtc  1140
ctgctttccc agaggggcag aattaaggcc cctatttggt ttttattatt gtaatcagtt  1200
aatagctgtt ctataatgcc ttacttattg tgttaatttt ctgtagttat atccagaggc  1260
cgcttactgg aagatcacat taaaaaaaaa aaaaatagaa gatctaactc cttctttaat  1320
gggtccagtt tccatctata gtttcagctg aaattatcga acacgattga attacaagat  1380
cattgaaaaa atatataaac tgtagctact attttaagta tatctgtggc gagtgcaaac  1440
```

attacattag tatgaggaca gtccaaacat tcgtcatagt atctctgttg accacagctt 1500

atgataccac ttcctcggat ctgccccgag tctgtcagag gtatgagtgt gtgctattgc 1560

cgggcacact gccaatcatt gtagttccat cgcataggtg cctaaactct gggtcccaag 1620

gaccatcgtc ctattgctgt tggagatttt aatgtgaatg tcttatgtag atgttggcat 1680

ttaaagaact aattctcaag ttagaatgga gcttcaaagc agaccaaagg gagaaacaaa 1740

cttacctgaa agatgacaaa gggcattagt ataataaatg tgacagaatg ggccccatga 1800

tagatgcatt ctgaattaga tgaatgtact caagtgacaa gagcttcact ggggggtcag 1860

cactgtgggt tctaggccta cctctaacat gaactcactc ttaagacctc tgggggcctc 1920

agtgttctct tttgtaaaat gaggaggtgt tgagatgaaa gttctgtttc ctctccacat 1980

tcacactctg tgtgatgttc agccaggagt gattctgtta agcagttcag cgaggaagag 2040

ccattagcag gtcaggattg gatcagaatt aaaatgcttc tggttcattg tagagtctct 2100

gaagatgggc atggcacttg gcataaaaca agggcccatt cgccccttg taataagtta 2160

gtgttgattg tgaagcctaa ttaaaactcc agtttgagaa ctgttattcc tatgatggct 2220

gagagaggag gtggagagag ggctagacca cgaagtcaca ggaaatggct gcatgaccct 2280

gggcaagtca cttcatttct cccagtcttt tctcctttac ttgtcacata aagagtttgg 2340

aggagaattg tcaaagtagc ttcttcttct tttttttttt gaggtggagt ctcactctgt 2400

cacccaggct ggagtgcagt ggtgccatct cggctcactg caacccctgc ctcccgggtt 2460

caagtctcag cctcccgagt agctgggatt acagggacct gccaccacaa ccagctaatt 2520

tttgtatttt tagtagagac ggggtttcac catcttggcc aggctggtct tgaactcctg 2580

acctcatgat ccacccacct tggcctccta aggtgctggg attacaagcg tgagccattg 2640

cgctcagccc caaagtagct tctaattaag aaagtcaatg accttatgag aatggtcaac 2700

cctgtaaagc aaataaaaag gttccgatgc tttacaatat ccagtgtcca gagcaggtag 2760

agtacattat ctgcgattta atgcttgctg ggaagaactt tgcggggatg ggctgagaag 2820

aagaggaagg aaaggggaac tgtaccctca agtttgactg ggactttcat gcaacgaagg 2880

aaatgaggtc tcctgcaatt gcctcttatt aaggtagaga atgtatcaaa tgctgtgttt 2940

aaatcaattc aatgccgagt tcttagcaca gtgcaccacc tgttttggct gtttccatat 3000

cctggccata gtggtgatgt gtgagagctt ttcctttggg caatgccatc agagaaggaa 3060

atgaatagca acaacatatt g 3081

<210> 572

<211> 602

<212> DNA

<213> Homo sapiens

<400> 572

actcacggat tttcactcgg cggtagtcca ggcgcgcagc ggcggcttgc agggcgtcga   60

ggcggcggtg cagcgcggcg gtgcggtggc ccagcgcggc cgcctggccc tcgagctcgc   120

cgaagatgtc cccggcgcag cgcgacaggg tctcctatgg acagaagtgc gggcaaggag   180

ctttgttcct ccccgatgtc accctcccac agcccacttg ctagcaggcg agagaggggt   240

ggaggccggc agtaaggcat gtactgaact ggacctctgg tggaatggcg tcacccacgc   300

tgggcttggt tccacatatg gtatctgaga ctcacacagt gtggttggaa gatagcaccg   360

tgacctccca ggcacagccc tctgccagcc ctccactggc tgccctagga tgctggcctt   420

cctccgatgg gagtcgggcc cagtctgctg tgagccagga gaagccagca agctccctgc   480

gaggcctgga ggagcccttc tcactcagct tggtgttcga tgccagtgcc cccgcccatt   540

gtggggtgag ggtgggactc tcagcacagc cctgtccaaa taaatcctct aaagccctct   600

tc   602

<210> 573

<211> 4012

<212> DNA

<213> Homo sapiens

<400> 573

gtgcgatgcg cgtcacggcg acgtgcggtc gtgggggcgg ggagacgcgg cggcggctac   60

accgggcttg gcccccctccc tcctccgttc ccccctcctc cccctcccc tcagcggtgg   120

ctcccaagaa gtccgagaca cgcggtgagg cggcgacggg ctccgggatc aactcactat   180

cctgaaggtc cattctccca agaagagggg acagaaagac agatctattt gtaagaaagg 240

cttgggtatc ccatgaacga gccaacagaa aaccgattgg ggtgcagcag gactccagag 300

ccagatataa ggctcagaaa agggcaccaa ctggatggta cacgaagagg tgataatgac 360

agccaccaag gagatttgga gcccatttta gaggcatctg ttctatcttc ccatcataaa 420

aaaagctctg aggaacatga atacagtgat gaagctcctc aggaagatga gggctttatg 480

ggcatgtccc ctctcttaca agcccatcat gctatggaaa aaatggaaga atttgtttgt 540

aaggtatggg aaggtcggtg gcgagtgatc cctcatgatg tactaccaga ctggctcaag 600

gataatgact tcctcttgca tggacaccgg cctcctatgc cttctttccg ggcctgtttt 660

aagagcattt tcagaataca cacagaaaca ggcaacattt ggacacatct cttaggttgt 720

gtattcttcc tgtgcctggg gatcttttat atgtttcgcc caaatatctc ctttgtggcc 780

cctctgcaag agaaggtggt ctttggatta tttttcttag gagccattct ctgcctttct 840

ttttcatggc tcttccacac agtctactgc cactcagagg gggtctctcg gctcttctct 900

aaactggatt actctggtat tgctcttctg attatgggaa gttttgttcc ttggctttat 960

tattctttct actgtaatcc acaaccttgc ttcatctact tgattgtcat ctgtgtgctg 1020

ggcattgcag ccattatagt ctcccagtgg gacatgtttg ccacccctca gtatcgggga 1080

gtaagagcag gagtgttttt gggcctaggc ctgagtggaa tcattcctac cttgcactat 1140

gtcatctcgg aggggttcct taaggccgcc accatagggc agataggctg gttgatgctg 1200

atggccagcc tctacatcac aggagctgcc ctgtatgctg cccggatccc cgaacgcttt 1260

ttccctggca aatgtgacat ctggtttcac tctcatcagc tgtttcatat ctttgtggtt 1320

gctggagctt ttgttcactt ccatggtgtc tcaaacctcc aggagtttcg tttcatgatc 1380

ggcgggggct gcagtgaaga ggatgcactg tgatacctac cagtctccag ggactatgac 1440

cctaaaccag ggcctgcggc acttgcgggc ctccctgctg gctactgatg ccagtaccag 1500

aggagcccca aaactttgac agcctcgtgg gctttgtgac ggcccagggg ctctgcgtgg 1560

tacatgactg agaagagaaa aacaaaaata aatcatacct caaaggatgg agtgcatcaa 1620

ttgggagaaa aggagacata gcccaaaccc tggcttattc ttgggatcta ctgattgcgg 1680

gctctgcaag acccttggca aactggcttc tgatccatat catatttatt tgtagaagat 1740

ggcgaaacag tttagctggt ggttctttct tctccctttc tctctctcta tgacaataat 1800

acaaaccaat ttaagtgaac atttatatcc gataaggggt gggagtgtga ttttaaatgc 1860

tcttttggga gaacaaagaa attaatgtaa ataagatttc taactgttta aataagactt 1920

●

```
tatataaatg tttaaaacat aggggtaagg gagggaggga gaatttttgt atagaatgaa  1980

acatgcaagt accacacact gtttgaattt tgcacaaaaa gtgactgtag gatcaggtga  2040

tagccccgga atgtacagtg tcttggtgca ccaagatgcc ttctaaaggc tgacatacct  2100

tggaccctaa tggggcagag agtatagccc tagcccagtg gtgacatgac cactcccttt  2160

gggaggcctg aggtagaggg gagtggtatg tgttttctca gtggaagcag cacatgagtg  2220

ggtgacagga tgttagataa aggctctagt tagggtgtca ttgtcatttg agagactgac  2280

acactcctag cagctggtaa aggggtgctg gaggccatgg aggagctcta gaaacattag  2340

catgggctga tctgattact tcctggcatc ccgctcactt ttatgggaag tcttattaga  2400

gggatgggac agttttccat atccttgctg tggagctctg gaacactctc taaatttccc  2460

tctattaaaa atcactgccc taactacact tcctccttga gggaatagaa gtggaccttt  2520

ctctgacata gttcttggca tgggagccag ccacaaatga gattctgacg tgtccaggtt  2580

tctcctgagc tcatctacat agattggtag acccttcctt tggattagga aagatgagtt  2640

ttacctctgg tacactgtct tggtaagcct ggatgtgaca gacacctcgg ctctccttga  2700

ataagaaagc cagcagaact cttaaagcca gttgtagtac ggagttgtca gcactcactg  2760

aacctcactt tacagggata agagtggtgt ggcattttaa atacaatggt atgttattgc  2820

cagggagtga ggtacaagac gatggctcat gtcacaggcc tacctgatac ggtgtcagag  2880

aaagtggtgg ggaaaggatc tggttcatgg aattctgatc ttggcccata ggtgaaccac  2940

caaaatagtg ctcgagtctt aggttactgt catcaaagac ttgggatgac tccattatat  3000

cctgggggttg tgggtattag aactaaatat ggaggtcctg agcatgggga ctggcgtcct  3060

cagtaggtgt ttgggaatat gggaagggtc tcctatttat tcaatagagt tttctcagtt  3120

attttcctcc tttgcccttg caatctccag caaaaggtgg gatctaggaa gaaagaatcc  3180

agtgtagaag ttgagaagaa cttgaacgtt ttggttctgg ataaggtcac tgtcctaggt  3240

gctaggtgga ccgagcaaaa gactcagtgg atgaactggt gcagtgcctg acagaataaa  3300

gaacagtatt aatccctttg agaaagcata gtccagcagg acagtggcca tttggacaga  3360

agcccactta gtttcttggg agcaacagca cgtatcagaa gccagacttg ctcttcggtc  3420

atgcactttg ggatacagcg tataggtgca gccctgtcac aacaccaaca gaagtagcag  3480

cctctgggtg cagtcaccca caccccaaag ctggaaggat ctggttcaac atagcacaaa  3540

cccttaggaa aaatgaaatt aacatcactg atgtgtaatc cagtaaaatc tcccttttc  3600

gggtgtgtat gtgggcatgt gcccatttct atgtgtgtgt ctacgtgcag ctcactacca  3660
```

acagcctcat gtgcacttga cctgacagtg ctcgctgaga actctcacca ggttggcgcc 3720

tgaatgcctt actctcagca gtcagaggct tgcttgctct gtgcagattt ttaattttct 3780

tttttggccc taggctggtt gggacctcta cagcttcatt ctttcaccat taaatagtgg 3840

ccttttcag tattttccct cttccccttt ataaattatg ctaaagccac aaagcacatt 3900

tttggggatc atagaaggtt ggggttccag aaaggcatct gtgtgatggt tccattgatg 3960

tgggatttcc ctacttgctg tattctcagt ttctaataaa aagaaccaaa tg 4012

<210> 574

<211> 2298

<212> DNA

<213> Homo sapiens

<400> 574

ctaaagtgtt gggattacag gtgtgagcca acgcgcctgg ccagctaatt gtctctgagc 60

atttctgagt gtacccatgg gtccagctat gtctcctccc tgtgtctggg tgtctccaag 120

gatctggcta tacctctttg agtctctagg ctgtatctga gagtgtggct tatgcctgtg 180

gttccagcac tttggagggc cgaggcggag gatcgcttga actcaggagt ttgagaccgg 240

cctgattagc acgatgaaac cccgtctctg ccgaaatgca agagttggcc cagtgtggtg 300

gcatgccagc tactctgcct gtggtcccag ctactcggga ggctggggtg ggaggatcgc 360

ttgagcctgg gagtcgcagt gagctgagat tgcgccactg cactccagcc tgggtgacag 420

agcgagaccc tgtctcagaa aaaaaagaaa aaagacagca tggctgggcc tcttccttcc 480

cgcatctgtc tcagacgatc tgtctggatg tcccctgcgg gtgtccctgt gtctcctctg 540

cgagtgtctg gatctgtcca tatttgtctg ggtatgtttg agagtcgctg tgtcttccct 600

gagtaggtct gggtgtgcct gatggcctaa ctgtgtcttt ttctgaggct ttctggtgta 660

tccaaagttc tgaccgtgtc tcctgctgtg catcccaggg catctgaggg cgtgactggg 720

tctccccaga gtctgggcct ccctcctagg gcatgtggtt aaatccttgc ctctgcagcc 780

tcttccctcc tgcaaagagc atggtccccc cacctgcata gtttgaggag tcctccgggg 840

tcaacttccc catctgaccc ccccatggcc ctgtccccag actgtgaagc acccctgaag 900

```
aaggaggggtg gcctcccgga agggccggtc ctcgaggctc tactgtgtgc agagacgggg   960

gagaagaaga ttgagctgaa ggaggaggag atcattatgg actgtcagaa acagcagttg  1020

ctggagtttc cgcatgacct cgaggtggaa gacttggagg atgacattcc caggaggaag  1080

aacagggcca aaggaaaggc atatggcatc gggggtctcc ggaaacgcca ggacaccgct  1140

tccctggagg accgagacaa gccgtatgtc tgtgatagtg agtccttctg aagaggggga  1200

aaggcagaga gaggggggcc cagagactcc ccacctcgtg gccctctccc tcccgttcca  1260

gacccgggtt gggaggctgc tcaggtctct ggctgagggg ggaggtgtga tcctggaggc  1320

cagggtggag gcggcagggg cccggagggg ctgacaggcc ctcctggctc gctcgctccc  1380

cagtctgtgg gaaacggtat aagaaccggc cggggctcag ctaccactac acccacaccc  1440

acctggccga ggaggagggg gaggagaacg ccgaacgcca cgccctgccc ttccaccgga  1500

aaaacaacca taaacagttt tacaaagaat tggcctgggt ccctgaggca caaaggaaac  1560

acacagccaa gaaggcgccc gacggcactg tcatccccaa cggctactgt gacttctgcc  1620

tggggggctc caagaagacg gggtgtcccg aggacctcat ctcctgtgcg gactgtgggc  1680

gatcaggaca cccctcgtgt ttacaattca cggtgaacat gacggcagcc gtgcggacct  1740

accgctggca gtgcatcgag tgcaaatcct gcagcctgtg cggaacctcc gagaacgacg  1800

accagctgct gtttgtgat dactgcgatc ggggttacca catgtactgc ttgagtcccc  1860

ccatggcgga gcccccggaa gggagctgga ctgtcacct ctgtctccgg cacctgaagg  1920

aaaaggcttc tgcttacatc accctcacct aggccggctc ggctcgccgc gactctgggg  1980

tggtgctcgc ctacctgcct ctccgagctc ctcaattctc ccccaccctg aacatcccgc  2040

aggggggaggg ggagaggggg aagccgagag ggggctgggc caccccctcc cctctgtgca  2100

agtggaatgt ctgccctgtg ggtgggtggg cccggccagg gcctctccct ccctccctcc  2160

ctctctgtcc cttggcaaat ggacaccagg ggcttctccc ctcaaagcca taccccgcct  2220

ctgggcgggc atggggggtg gtgggtgcca gccaggggca tggacagagc cttttctaa  2280

agaaaaagac aaaaagtt                                                  2298
```

<210> 575

<211> 2555

<212> DNA

<213> Homo sapiens

<400> 575

gtgtattccc ttgccctggg cctgcccctt ctcctgcctg ggaaagaggt atgactccca   60

caggagcaaa gaatcctggg ggcttccagt tccctccacc atctctacca tgctgaccca   120

tttggggctc agcactgaga cagaggcaag accagcagct ccaacatgta gtgtaggctg   180

gcacagagca aatgcccccg cagcctactc cccttgccca tggctcatgt cagtaatcaa   240

cctacgtacc tttcccactg aaccaggaca gggcctccag gcctcagcac agaactgcag   300

acagccacca ccaggcattg tcaataagac ctcagttccc cctcctgccc cactgcagag   360

caatccattc catccaaagc agggtgactg gcagtctccg gccaggcatg gggcaagggt   420

ggggactgcc agtgtttgct tgtgtctagg agttatgaac aagctggcca ccaaaatcgg   480

cgtcaccctg ggtgcccacc agcgctgtcc tgtgtcttgg gtctgtgagt caaagaaaag   540

gtccctggcc cagggagtga caggcagtaa ttaggctgag ttgggtgggg aggtttgtct   600

cggcctccac tgttcccgga aaccgctgtt ctccttggaa cagccactgg gagttggagt   660

gtttatttga tttctgactt gctaagcctg taatttacct gctggaacag acagagtcca   720

gctgcccaaa ccgtgtcatt aaaagcagat cctgggcccg ccccatccac aggcacagcc   780

tggcagagtg gttccacctc cccatgggcc caaggatgcg cctctctgga gttcacgtgc   840

tgcacccca gggaggggcc tggggagagc tggtccagca gcaggggtgg aggctggggc   900

cacactgcgg gacagcagcc cctccacctg gaccagggag ggcctccatg tgcaagcgca   960

gaggaagaga ccctctcatg tacataaagg gtgggcccag gctgtctgga agatggtgag   1020

ttccccacta gtctaaggct tcaagctcag ctagcagaga ttggaagagg caatggcctg   1080

agtgttagga gacaggtatt ccggttccaa ctcagccact gacttggtgt caggacaagt   1140

ccccttttctt attcacgctt cagtttctca tctgcaacat gaggacatag gactctttaa   1200

ttccaaaggc tcttccaacc cagagaaccc atctgccccc atgaccttct cccagagctt   1260

gagacatggc ctgagccccc tgctgccata ggacttgggg cctatctgcc attgcaggac   1320

ctgatttaac agctctcttc ttccaatact gggcagtaga gtttcggaaa ctgacaaatg   1380

tgtggtctct tcagtgccca gtgtgtaacc tggcatggtt tgggtgtgct aggagtttgt   1440

gaaatgaatg ttttcaagac gcaaacgctg ctatgcccat caggtgtgca cagcaggcct   1500

gaggatcatg atgagactcc ctttttatgc agcaaggcac aaagtgtgac agtcgtggcc   1560

ttcctggtgg ccagacttct agcaacttta gccacccacc aaatgacatc acatacagaa 1620

ggcctcagaa agggaggagg tcgtaaggac acacagctga tgaagggtca gtgctcagct 1680

atcaaggtca tcttctggcc tggttgcctc ccacagccca ggatgcattc aaggctgcac 1740

atcaggagca taaataaggg tggtcagctc aggcccactg gctgcaacaa gtagccactg 1800

acagggagtc tggggccatt tggtgcagaa caacccccaa cccagtggcc atcttcacaa 1860

ctgcagcaca gtgctggccc taatgccagg tgagcgtgca aagtcctgtt tctttgtctt 1920

tacat.aggga ccgggcgatg cgctttagag aaattcccta ttatttcaca ggaaaggagg 1980

ctgtgaaaag gagagggcag gttttggagc caagtcgacc tggcatcagg tcctggctgc 2040

cttttttttt ttttttttaa agacatacat ggtcttgctt tgtcgcccag gctggagtgc 2100

agtggcagtg tcatggctca ctgcagcctc aacctgctgg gctcaagcaa tcctcccacc 2160

tgtgccctca tgggcagctg aaggggagc tttctacccc aggttccttt ccttactgaa 2220

aagtcttgag caaacagttg ccgctctcca ccccctgctt tttaaaaaaa attttttctc 2280

acgtaagaaa atgttatctg tgtgctgggg aaaattttga aaataacaaa aaccagaata 2340

caaacaccca taatcaatca cagagataac cactgttcat aattccttcc agtcttctta 2400

cttggcacat atacatttgt ctttctttat atatgacata tggatatttt acaaagttag 2460

gatcctactc tatgcactgc ttggtgatcg gatctattca atgtacaaaa tattttgaaa 2520

gtttctgtga ttaaatgttc tttgaaaaca taaat 2555

<210> 576

<211> 2654

<212> DNA

<213> Homo sapiens

<400> 576

tttcccttaa tggtgctgtc tgcctgccag gagacatatg agaacacaag ccaccaggtg 60

cacaccctgc ggaggctcgt taaagagaag gaggaggcct ttcagcgtcg atgtcatttg 120

gagccaaatg tccgggggcct ggagtctgtg dacagtgagg ccctggccag agtaggccct 180

gcagagctga gtgagggcat gccaccctcc gacctggacc ttctggctcc agccccaccc 240

```
cctgaggagg tcctgcctct tcctccacca ccagctccgc ccttgccccc tccacctccc    300

ccattaccag acaagtgtcc cccagcccca cctctccctg gtgctgcacc ctctgtggtg    360

ttgacagtgg gcctgtcagc cattcgaatt aagaaaccta tcaagaccaa gttccggctg    420

cctgtcttca actggacagc actgaaaccc aaccagatca gtggcactgt cttcagcgaa    480

cttgatgatg agaagatctt ggaggacctg atcttgata agtttgaaga attattcaag    540

acaaaagcgc agggccctgc ccttgacctc atctgctcca aaaacaagac agcgcaaaaa    600

gctgccagca aggtgactct gttggaagcc aatcgtgcca agaacctggc catcacccta    660

cgcaaggctg ccgctcggc tgaggagatc tgcagggcca ttcatacgtt tgacttgcag    720

acactacctg tggacttcgt ggagtgcctg atgcgcttcc tgcccacaga ggctgaggtg    780

aagctgctgc ggcaatatga gcgggagcgg cagcccctgg aggagttggc agctgaggac    840

cgcttcatgc tgctcttcag caaggtggaa cggttgaccc agcgaatggc tggcatggcc    900

ttcctgggga acttccagga taacctgcag atgctcacac cgcaactcaa tgccatcatt    960

gcggcgtccg cttccgtcaa gtcttcacag aagctgaagc agatgttgga gatcatactt   1020

gcactgggga actacatgaa cagcagcaag cggggagctg tgtatggctt caagctccag   1080

agcctggatc tgctgctgga taccaagtcc actgaccgga agatgacact gcttcatttc   1140

atcgccttga cagtgaagga gaaataccca gacctggcta acttctggca tgagctgcac   1200

tttgttgaga aggctgcagc agtgtccctg gagaacgtgc tgctggacgt gaaggagctg   1260

ggccgggggca tggagctgat tcggcgtgag tgcagcatcc atgacaacag cgtcctccgg   1320

aacttcctca gtaccaatga aggcaaacta gacaagctcc agcgggacgc caagacggct   1380

gaggaggcct acaatgcagt tgtgcgctac tttggcgaga gtcccaagac tacacctcct   1440

tctgtattct tcccagtatt tgtccgattc attcgttctt acaaggaagc agaacaagag   1500

aatgaagccc gcaagaagca ggaggaggta atgcgggaga agcagctggc tcaggaagcc   1560

aagaaactgg atgccaagac cccatcccag cggaacaagt ggcaacagca ggagttaata   1620

gcagagttga ggcggcgcca ggccaaggaa caccggcctg tttatgaggg gaaggatggt   1680

accatcgagg acatcatcac aggcctccac tgccagccta tggttgttcg ccaccaagcc   1740

aggagtgctg caccgcccag tggtcccccct cgggctccag gcccccactg agaccctctc   1800

ggaggcagaa gcacttcacc cctcagagtc ctacaagtcc aaccagtgga cctggaattg   1860

gccaagggct caggagaggg ctgtgttgct ctctcaacca tgtccgcccc agctcttgag   1920

gctggatctt tctacttgtg ccactatggg cactaggtct gtaggtccct ggtgcttcca   1980
```

gtactgcact ttgcccccaa ggtctttgac ttcatttcct gaagggtcac caagggtcag 2040

ctcagggcta ggaaaaacca tttccagcct tagcctaaac agggcacata gatctctccc 2100

actagagccc agagggatga gaggagagag caactgttct ttcttttttt ttcccttcct 2160

ttttgcaggc ccatggtcag ctctggtcta gatgtatcta ggcttaggga gccctgggac 2220

cctgccagtc tcagttcatc tcttaccagg agcaaggccc tctgaagcat gggccgtgcc 2280

agctgtgccc tagtgataag ggtaagagga gagatgtcag gctcactgcc cttatttctc 2340

tgcccatttc attctaggct cacactgtcc ttgtcaaggt gggcagaaga gcagaggtct 2400

tctctgcacc aaccactctc tgcagatggc tggagaaagg gtgtgccaac tcttcacctt 2460

ctttcctcag ctacggtttt tttttttttt tttttttttt ttggcagggg acaaggagca 2520

tggtggtctt ggctatttgc ttacctcccc gtttctcctc tgcccctgga agggaatgtg 2580

ggggcccact tttttgtaca tgtaccacct ccctttcctc ttactgtaca taaacctcag 2640

actctccccc tctc 2654

<210> 577

<211> 2915

<212> DNA

<213> Homo sapiens

<400> 577

tagacagtca gctcacttaa aaagacatga acagactcat aatgaaaaga gtccttatgc 60

atctctttgc caagtagaat ttggaaactt caacaatctt tctaatcatt caggtaataa 120

tgttaactat aatgcttccc aacaatgtca ggctcctggt gttcaaaaat acgaggtctc 180

agagtcagat caaatgtcag gagttaaggc agagtcacag gattttattc ctggtagcac 240

cgggcaaccc tgtcttccta atgtactttt ggaatcagag caaagcaatc ctttttgcag 300

ttattcagag catcaggaga aaaatgatgt cttcctgtac cgatgcagtg tttgtgctaa 360

aagtttccga tctccatcta aactggaaag acactaccta attcatgcag ggcagaaacc 420

atttgaatgc tcagtttgtg gcaaaacatt cagacaggct cctcactgga agagacatca 480

gcttactcac tttaaagaac gaccacaagg gaaagtggtt gccttagatt cggttatgta 540

```
aattgtcgca accactaaca attgtggtct ctggtgatct tattttttaaa gcctgtatta    600

tttaaaatgc atttttattg aaaggcctgc attaaactga atggtttcac aggcatttgc    660

ttgtcctgca tagtaaggag gtagaataca tagaaaatta atacaatgtt ttagaaacag    720

ccaagttaat tttagaggca agaacatgat ttgatgctat aaagtaggca ttttaatatt    780

gtaaacatat actttggctg tattgaaaaa tataaatcca tgatggctgt acaaataatt    840

tagcctcatt cattttttaa aggaattatt ccttaagaca tgccatctct ttttagatat    900

actcaaaaga ctgagaggca aaacttggct tttagctgca gcacatagcc ctgttatatt    960

tgatttattt tacatttcat atgaaagcat aattttgtcc acatgtgact caaattgcat   1020

tggtaatttt tttttttttt ttgtaagtta aaaaaactac agagacacta aaggtgaaaa   1080

tggatgagac aattatagta ttattttcat tggtcttttt ttttgagatg gagtctcact   1140

ctttcgccag gctagagtgc agtggcgcca tctaggctca ctgcaacctc cgcatcccag   1200

attccagcga ttctcctgcc tcagcctcct gagtagctgg gattacaggt gcctgccatc   1260

acgcctggct aatttttgta tttttagtag agacgggggt tcaccaagtt ggccaggatg   1320

gtctcgatct cttgaccttg tgactcaccc gcatcggcct cccaaagtgc tgggattaca   1380

ggcatgagcc accgcacccg acggtctttt caaagctatt tattttttagg actatgtggt   1440

aatttcacct tcaggtgata aggattttttt ttttctccca gctagtgcta tctttctcaa   1500

aataatttaa aagtaggcga gaggctagga tgtacctata tttaccatgt ttacttacca   1560

ggaatatttt ctaagtgcca tagtctttttt cataatacgt atgagtttta ccttttcaga   1620

ggaataattt caagtcattt atttgctcat taatgatagc agtagtcata gacttaagac   1680

tattctagag atcttcatct ccataagact tttacattta ttttagtaaa cttttctttc   1740

tatgcctctt taatggagtg gttctgttat ttaagcctgt tctaagtttg atcaaatggc   1800

aatgactagg tctagtttta gttttttattt ttgcaggagt ctattgctaa agaatttttat   1860

tttgatcctt gttaaatttt tattttaatt aataaggtag tcattcctgt agagggataa   1920

gatgcttgta gagttgtggg tatcattcca aatagaactg ttatgatttg ggaaatattc   1980

tttactacaa aggacttatt tcataattac aaattttcct tcatatttgc ctttgtttat   2040

aaaatcttca ggaatgacat tctctagcaa taaaaggaat gaaccgttat gtttctaagc   2100

tgaaaagagg aacaggtggg taattatcct gccatactta aatatagtgg aaaatcctct   2160

attgagaatg tggataaatg aacaattgta agttttgcat cataaactga gaactttctt   2220

ttgacagggg ggaggcggga gggatagtag gtgggggtga tctgcttgct tcttttacca   2280
```

```
caggtgattt ttaagtaact tgggtttaat ttacagagat gaaacatgac agtctgagta    2340

aaatacccag tgatgtagaa gtgtgcctgt ttattatgta gatacagaca tccagcaaaa    2400

acaggagaat cacatgcttt aaagaacact ttctcttagg tttccttgag atatgttcct    2460

ccagtgcaag caagataatg gtttacagaa tttgctttac acaaaacttg tcaagaactc    2520

atctgttaaa agcaaggaat aactagttta tattttccaa taatgttcaa ggttttctcc    2580

ttaatatgtt tgaaattatt gattttggca tttttctaag caatttatgt aattttattt    2640

gaagaaaatg ttttgtataa tgttttttccc agcctaaaca gggagagtcc taacagtgtt    2700

gtgcttgtat gattctgaga ctttatttgc gtaagtgata ctactatact ttatttttga    2760

cccatgcctt tttaagctgt ttcatattga aaggtggaat attgtaaaaa ttttgtcaaa    2820

gatgtactgt agtgctattt gaagtacctg taacaaaaca gttggccctc tgtatccatg    2880

tactctgcat ctgtggatta aaccaattgc agatc                               2915
```


<210> 578

<211> 2613

<212> DNA

<213> Homo sapiens

<400> 578

```
agtgacggcg cgaatggcgg actctcagct gttctgtgtg gcggaggaac gcagcggcca     60

ctgcgccgtg gtggacggaa acttcctcta cgtgtggggg ggctacgtgt ctattgaaga    120

caatgaagta tatttgccta atgatgaaat ttggacctat gatattgata gtgggttgtg    180

gagaatgcac ctcatggaag gagaactccc agcctccatg tcaggaagct gtggtgcttg    240

cattaatgga aagctgtaca tttttggagg atatgatgac aaaggataca gcaatcgact    300

ttattttgtt aatttacgaa caagagatga aacctacatt tgggagaaaa tcaccgactt    360

tgaagggcaa ccacctacac cacgtgataa actttcctgc tgggtatata aagacagact    420

aatatatttt ggtggttatg ggtgtaggag acacagtgaa ctccaagact gttttgatgt    480

tcatgatgca tcttgggaag agcagatatt ctggggatgg cataatgatg tccacatatt    540

tgacacaaag acacagactt ggtttcaacc agaaattaaa ggtggagttc caccacagcc    600
```

```
acgagccgcg catacgtgtg cagttcttgg aaataagggt tatatctttg gcggacgtgt   660

tctgcaaact aggatgaatg atttgcacta tctaaaccta gacacctgga cttggtctgg   720

aaggattact attaatggag aaagcccaaa acatcggtca tggcatactt taacacctat   780

agctgatgat aaacttttcc tatgtggtgg actaagtgca gataatatcc cattaagtga   840

tggttggatt cataatgtca caacaaattg ttggaaacaa cttacacatt tacctaaaac   900

aagacctagg ttatggcaca cagcctgttt gggaaaagaa aatgaaataa tggtatttgg   960

tgggagcaaa gatgacttac ttgccttgga tacaggtcac tgtaatgatt tattgatctt  1020

tcaaacacag ccttattcac tactcaggtc atgccttgac tgcattggta aaaattctat  1080

catgttagaa agtcagatat ctttattacc tcctaaactt ctgcaacaag tactcaaaaa  1140

aataacattt tgggctgcag ctaatcaccg agaagaacaa agagtccaaa aagaagaaac  1200

agaaaataaa tatcagtgga tcagtagcaa ttaaattgtt atatacttta catatttagt  1260

atgttttaac tttttaatca gactatacat ttacactccc aaattgcagg ctttatttaa  1320

aggataaaat ttaaaggata aaaaaacagt cactctgtta agtgactata tgccatggga  1380

tatatggaaa aaagatatta atgcagatta atttatattt gtaaacaaat ttccttacaa  1440

actgcagaac aaatattctt tctgaaagta agtacagtta taacagattt taaatcaatg  1500

tgtattcttt actggaaaga ttacatacat ttgagaataa gaaattactc tcaagaactt  1560

cagaaatctg caacataatt ttataaatat ataaatacat gtatgtatgt caaaacacta  1620

catatacact ttcagaaaga ataaactttc tcaagtcatt ttaaagttac ctaacgttct  1680

tcttgaataa ctaatacagt gggtcaaata ttataaaata ggcaaacacc aaaatggtat  1740

taaatattga actcctgacc ttttcgacac ttacctagta aagtattctt aggcatcatc  1800

ataacttttc ctcaccttta ttcgaataga ggaataaatg tcttcagttg tctctccatt  1860

acccctaagt tattagtttg tctagtttat atataaagac catgttttaa agtacataaa  1920

gtggaggttt atttatcata caggctttga aacattaaga agcagtattt ttattaactt  1980

tttgagacat attaaaatac attttgcctt agaagactgc ttctaaagta attttgtaa   2040

gtaatgagat gggatggtaa tctagtaatt tgactttata gaaatccctc agtttggccc  2100

ccaccattct acagagttgt actcaagaca gatactgaaa aaatctaata ccttcccttg  2160

tattttcagc attaccatct atacagaaat ggaacactgt atctttatat tcctaaaaat  2220

ggtacttttg gcataattaa gaaatttttc ttcatattat cacaatcatg cccttccatt  2280

gaattattaa ttacaattaa ttactaaaaa gcttggtatg taaaattatt ctccacaata  2340
```

ttaccatgca agttatctct gaaatttaaa atgttaaaga aaaacatttc tatattgaaa 2400

tatatataat ttataatgaa aattatagta gtttgtagta tttcattgaa ttttagagag 2460

atatttcata tatatgtact gtattttgga tgtgtaaagc ttctatgtat tgaaatattt 2520

ttttacgttt tatttattgt acaaagtgta tataattact gttttctttt ttgtcagtgt 2580

aaagcagtca ttagaattga ttatacaaaa aat   2613

<210> 579

<211> 2588

<212> DNA

<213> Homo sapiens

<400> 579

agactcctcg cagccagcga tggaggcgag accccctagt aacagaggcg gtggctactg 60

ctgcggccac tgggtttcgg cctcttccca gcagcggctc taagaagcgc agcggaactc 120

gaccggatcc aacccagtta gttacttcct gtctagagtt gtagcttcca cctgcacctt 180

ctagccacca tggcaacctc atctgaagaa gttttgctga ttgtaaagaa agtgcgtcaa 240

aagaagcagg atggagctct gtacctcatg gcagaaagaa ttgcttgggc acctgaaggc 300

aaagatagat ttacaatcag ccatatgtat gcagatatta ataatgctg caagaagatc 360

ctgttttgtt tcagctttat aaagaccttg ttgtgagtca agtgatcagt gctgaggaat 420

tctgggccaa tcgtttaaat gtgaatgcaa cagatagttc ttccacatcc aatcataagc 480

aggatgttgg catttctgct gcatttctgg ctgatgtccg gccccaaact gatggctgta 540

acggtctaag atataattta acttctgata tcattgagtc catatttagg acctatccag 600

cagtaaaaat gaaatatgca gaaaatgttc cccacaacat gacagagaag gaattctgga 660

cacgtttttt ccagtcccat tattttcaca gggatcggct gaatacaggg tcaaaggatc 720

tctttgcaga atgtgccaaa atagatgaaa aaggcctaaa aacaatggtt tcattaggag 780

tgaaaaaccc actactagat ttaacagctt tggaagataa accattagat gagggctatg 840

gcatttcctc tgtgccatct gcttccaatt ctaaatccat aaaagagaat agtaatgctg 900

ccatcatcaa gagatttaac catcacagtg ccatggtcct ggcagctgga ctcagaaaac 960

aagaagcaca aaatgaacaa actagtgagc ccagcaacat ggatggaaat tccggagatg　1020

cagactgctt tcagccagca gtcaaaaggg cgaaattaca agagtccatt gaatatgaag　1080

acttggggaa aaataattct gtaaaaacga ttgcactaaa cctcaagaag tcagataggt　1140

attatcatgg tccaactcca atccagtcac tacagtatgc aacaagtcag gacattatta　1200

attcttttca aagtattaga caagaaatgg aagcttatac acccaagtta actcaggttc　1260

tctcaagtag tgctgccagt agtaccatca cagcactgtc acctggaggg gcacttatgc　1320

agggaggaac acagcaagcc ataaaccaga tggtgccaaa tgatattcaa tctgaattga　1380

aacacttata tgtagctgtt ggagaacttc tacgacattt ctggtcctgc tttcctgtta　1440

atacgccatt cctagaagaa aaggtagtga aaatgaaaag taatttggaa cgattccaag　1500

ttacgaagct ctgtccattc caagaaaaga ttcggagaca gtatttaagc acaaatttgg　1560

taagtcacat agaagagatg ctccagacag cctacaacaa gctccacaca tggcagtcac　1620

ggcgtctgat gaagaaaacg tgaggtggcc atgatgctta caggttttgt gagattgaga　1680

gaactatgac ctgcagcaac tctggaaacc tggcctgaca gacaagcaga tgacctcaca　1740

ggagtgataa gaaacatctg ctccacgcca actcccagag ctgatgctat tgtacttgca　1800

cattggagac tgaaaggaaa gaagggacta aatgctgggg aggtaaatta agacagaacc　1860

aaatgagcta agttgcaaat atatatatat acacacacac acatatatgt acatgtgtat　1920

gtacatatat attttaaaag actgtttact gcagttgctc aggaactgct tttgattcac　1980

attaagctgc tttcagaaat taaaaaaaca ctttttaaag ggtgcattga taaaatctga　2040

ggttttttgg ttgtcgtttt tttctgtgta catttttttt cctaagttta tggcacaggg　2100

tagaccttaa gtattcctcc tccatccttc attcttcacc ctccatcgga tcctcaagtt　2160

ttaatgaatt ccaattatac cttacatcag caagttaaaa aaagtacttt aaaataaagc　2220

aaagggagac tgttgctcaa ccatcaggaa acagttgtca gaagacatca ttggttctgt　2280

gtttcctacg gaaataagaa acgataaata ttgcactgaa tgtttgtggt ttggagtccc　2340

tgaataataa agagggaata tatttgcaga aagtcgcata gggttttta atgcagaatt　2400

ttgtcagaag acaatggcgc tgcatgtttt tctttgagtg caaatgtaca ttgctaagat　2460

ttttttaaga tggcatgtgc tttgaaaaga agatattgca ttttttaagag tttaaaaatc　2520

ttatgagtga gaaatattaa aaaaatctta ttttcacctc tttagaagga ataaaagatg　2580

tttctcct　　　　　　　　　　　　　　・・　　　　　　　　　　　　　　　　2588

<210> 580

<211> 2801

<212> DNA

<213> Homo sapiens

<400> 580

```
cttaatgcca aactcacatt ccccaagccc tcaaatgcag gcatggaggg aaaattacgg      60

gcattctcag agcccctggt aagaatcgat cccagggctg gtacgctgag ccacgagaat     120

gcactgttcc tgtatcatgc agccaggcca ggaagctctg ttcttccagt tcggggagac     180

cccaggggaa ttcagcgata cttccgagca ctgagcatca gtctttatt accaacaagg     240

ggaaggtctg tagcttcctg agctcacagg ccagctataa aatcagcgtg aggcagccag     300

gaagcaccca gaactcttct gccacagttg tagaattgta ggacccagtg ggcaccacct     360

ttgtctcctg ggcaagtccc tttaccttcc aaggcctcct ttctcccacc ctgctccact     420

tttctcagcc tcctgaatga ggatggaggc ttaatagaca tgagaggatt ttgttttcag     480

ttcaatgaca tagagttaag tgagctgtca gggaagacga gaggcatagc tgctgtgagc     540

tcctgagacc ctgaaaatgc tggtttgctt cgcaggtgcc atctagaact taacaggcac     600

tttcggaaaa agttggctga ggaggaacct gctggggtat tagaagctgc caccagcggg     660

ttggtgattg atgttctttg gggccacggt gaggcatctt tttcattaaa gtggggcttt     720

gtgtcctaca agtgctttga gttcagagaa aagatgaacc aaaaatgaag aaaggaagtg     780

gctcttgctt ccccagcaaa gagttacttg ccttctgaaa cacaggcctt gttgccacat     840

aggaccagcc cctccagagt ctcactcctc aagttctgtg agacgctgca gaggacctgg     900

ccatggcctt gatcttatct agaccttggg aacacccctc aaccatcctc acctcacttc     960

tgcagaatgg ctgtctagga ctttaaaaat gaatgttcac ctttatcgtg ccttacatct    1020

tggaaaaaga tgtttcataa gtttactctt ctcagggtga aataggcctt tttatttgtc    1080

cttcgcctgt cttttcaga tttcaaggga gattccttaa ttcttacatt ccaggagtca    1140

gtgagacaat ctatgcttcc cctccctgac ccttttgtg tttcttggtg ttgatatttc    1200

acatgcttgg tccttctctt tgaacttttt agtgcttccg ggtcatcatc ctgatctctc    1260

tgtggcaatg ccttcctcca gctcccacct ctaaatcatc ttggcttccc actgcctggc    1320
```

cttttctaaa agaaccccaa tcttcattgc ctttaaaaca gccagatttg agtcaatttc 1380

atattggtgg ccagactgtt taaacacaaa ttctctagct atttacaggg ctcagagctg 1440

aggaggaaga aactcaagtc cccaaataat gactaatcac aattcattct caccagcaag 1500

agccatgaaa ttctaaggag ctggaatttg ggatggcttc aagtggccag tacaattgaa 1560

gcgtctggca gacaggcaaa gaagcctacc ttctcccctc cccacggtgc catcaatgga 1620

atcactttct tggcccctca cttaatatga atcatattca cctggggcaa ccaacgcctg 1680

acagagttgt agtgcagaag gcacctcttt gaagtgaaaa ccaggagatc ttttatcact 1740

tccccagccc tgcaggctca gtcacatgtc aaatagataa tgaataaatg cgtcgccaat 1800

gcactctatt catttatttt tgacaagtga gttggtgaca gtgccccctt gcatgctaat 1860

aaaatataca gcagccacac ttgtaaagtc tttgaaatac gaggcttcat gcgagtactc 1920

cactattaaa tctttgctgg aaaatggggt aaccagactg ctgggactct tgcaaaatga 1980

ttacgttcga agattagtgc cattctcctc tacacaggct atggtttcag acagcaccat 2040

ggctttgata aagtggctcc cagctcatag gaacttgata attaatgtcc tctgtgttgc 2100

atagagatca ggcatcaaaa actcggtggt gctgagacgc caacagaaca ggattcttct 2160

ggtatctgga ccactgaggg ctggttgtca aggagttatc ttctcttggt cgcacctagt 2220

ccacgtgagg gagaggaagg cttcacattg tctttacttg ggcccttgag attctaggct 2280

ttagacaatc tgaagctgtt agacctatca gccaggctcc tctctgacca aggacaaccc 2340

aaggggctcc ttagaccagc ctcacctgtc tggatcacca ttctcctcca gcttcaaaag 2400

tccatccttc ctgcaaatct catcaagact cgcggctctt aaagataacc ctctccttcc 2460

tgcagcactt ctatgcttga aggggaaggg gctggcacac atcttctctg tgtggcctcc 2520

tcctcctggc cacacggcct ttttcctggc ccctttcctt acactgttga catgacaagg 2580

gatctgaaaa gggaataagt ccaggttaaa gcctcaaatg gcacagatca aaacccactc 2640

tttctacaaa aatttgccgg gcatggtggc gggggcctgt aatctcagct acttgggagg 2700

ctgaggcagg agaatcgctt gaacctggga agtggaggtt acagtgagtc gagatcgcac 2760

cactgtactc cagcttgggc aacagaacaa tactccatct c 2801

<210> 581

<211> 2365

<212> DNA

<213> Homo sapiens

<400> 581

```
agtggcagtc tgttttttctt gctcctgatg ataattcatt attgctgctg cgggcggagt    60
tatatttgac catgaagaac tatgagcaag ctctccaaga tgccagtgca gcttgtcaga   120
atgaacctct cttgattaag ggacatcaag taaaagctca ggctctttct ggattgggaa   180
gaagtaagga agtgttaaag gaatttctct actgccttgc tctgaatcct gaatgtaact   240
ctgtgaagaa agaagcacag aaggtaatgt gtgaagtgct gttttcagct acagcaaatg   300
tgcatgaaaa tttaacatct tccatccaaa gcagattaaa ggctcagggt cacagccaca   360
tgaatgccca ggctctgctg gaagaaggtg atgcagggag ctcagagaat tcatctgaga   420
aatctgatat gcttggaaat accaattctt cagttttgta ttttatactg ggcctacact   480
tcgaagagga taaaaaggcg ttagaaagca tccttccaac agcacccagc gctggcttaa   540
agagacagtt tccggatgac gtggaggatg cacctgacct gaacgccctt ggaaaaattc   600
ccaagaaaga tctctcacct caaaggagcc caaactctga gacagaagaa agtcaggggc   660
tctcgcttga tgtaactgac tttgagtgtg ccctctgcat gagattgctc tttgaacctg   720
tcactacgcc ctgtggacac acattttgcc taaaatgcct tgagcgctgc cttgaccacg   780
ccccacactg tccttttgtgc aaagacaaac tttcggaatt attggcaagc agaaacttta   840
acataactgt tctggccgaa gaattaatat ttcgatattt gccggatgaa ttgtctgata   900
ggaagagaat ttatgatgaa gaaatgtcag aactgtcaaa tctgaccaga gacgtcccca   960
tctttgtgtg tgccatggcc ttcccacgg tcccatgtcc actccacgtt tttgagcccc  1020
gctatcggct tatgataaga agatgcatgg aaactggcac caagcggttt ggcatgtgtt  1080
tatctgctga gcacgcgggg ctttcagagt atggatgcat gctggagatt aaggacgtga  1140
gaacgtttcc tgatggaagt tctgttgtag acgcgattgg catcagtcgg ttccgagtgc  1200
taagccaccg ccacagagat ggctataaca cagcggacat tgaatatctt gaagatgaaa  1260
aggtggaggg tccagagtat gaagaacttg ccgctctcca cgattctgtg catcaacagt  1320
ctgtttcctg gttcgcgtct ctccaggatc gcatgaaaga acaaattta agtcattttg  1380
gggtaatgcc agacagagaa cctgagcctc agagtaatcc cagcggccct gcctggtcct  1440
ggtggatcct ggccgtgctg cccctggagc gcaaggctca gctggccatc ctcggcatga  1500
```

cctcgctcaa agagcggctc cttgccatcc gacggatatt agtcatcatc acgcgtaaga 1560

tgaatagtcg gcaagagctg gctaatgcca gggagagaaa taattgattt ttctctctgt 1620

caaggtttct ggcagccctt gtgcttttat aaatgtcagg catggacgaa tagccgtcca 1680

ttcattgtgc ttcatcaagt gcttgtggat gaggttccaa aatgggacgc ttgccaaaca 1740

ttgagtcctc ctcaaaaatg acaattctgt gtctggtggg atctgacctt gtgtgaggtt 1800

agcctgaagt ctgaatggag cccatagttg gaaaacaacc taagaaaatc tcttagaagc 1860

aggtgcttgg ggaatgcagt tcactgacag cacaggaccc tgcagatggt ttacatgtgg 1920

tttgggtttc acgagaaaga aggattcact tcccagtcag tatctggctc tgccagatgg 1980

taaaggcgtg ctttagtgtg tagacaatat gggggaacca cgtttttatc tggaagtgga 2040

tttcttagaa cacaggctaa ccgaaactac gcttaggctt tgcgtgttgc tgtgaagttg 2100

tctgtgaaat cgaataatca caccattgtt cagtgcagga gcccaaacta gtccttaccc 2160

aagaagtagt agcctctgga tagaactgtg tttaatgtcc tgttgtagtc ccaggtgttg 2220

taaattgcat gttgtaatca aacgaatgtc aaaacataag aaagtatacc ttggatatag 2280

aaaaacctga gaacagtatc attcacttga ggatatatat atatatatat ttacacacaa 2340

taaagtgagt taaaattgta tatgc 2365

<210> 582

<211> 3411

<212> DNA

<213> Homo sapiens

<400> 582

ttttcctcca ttccaggctg ggctgtagct gctcccataa agggatcaca gtttgtgttc 60

cacgcagaag gagcacagaa cacttccagg catatccttg gagctcaaga caggttgctc 120

agctaggcca gagaagagag ggatctgttc atttccagcc ctgcaggcct gttggctgtt 180

ttgtgcattt atgtagcttt taagtgcaga ctaatagcta tcatttattg catgcccact 240

atgtgccagg cactgtgcca ggcattctat gtgagctttc ttatttactc ctcccaacaa 300

tcctatacat taggtatcat tattgtcctc attttacctg agaatggaag tgaggcacag 360

```
agatgaacca cagagtttgt tctgggtcca tggtcctgtt gtttctatgt tctgtctgct   420

ctactacact gcctttcaga ggcaggtctg gaagttcaga gaccaagttc aaaccctgga   480

gtgttggggt atgaagtggc ttgagatttt gaatctttcc taccccatcc ctccctttgc   540

tcagcatctt caaagccatg gggcggggcc tgccagacga ggagcaggag aagctgctgc   600

gcatctgttc catttatacc cagagtggag aaaacagcct ggtgcaggag ggctctgagg   660

cctcccccat tgggaagtct ccatatacac tagacagcct gtattggagc gtcaagccag   720

ccagctccag cttcgggtct gaagcaaagg cccagcaaca ggaggagcag ggcagtgtta   780

atgatgtcaa ggaagaggag aaggaggaga aagaggtctt gccagaccag gtagaggagg   840

aggaagaaaa tgatgaccaa gaggaggaag aggaggatga agatgatgaa gatgatgaag   900

aggaagacag aatggaggtg gggcctttct ctacagggca agagtccccc actgccgaga   960

atgctaggct tctggcccag aaaagaggag ctttgcaggg ctctgcatgg caggttagct   1020

cagaagacgt gcgatgggac acatttcccc taggccgaat gccaggtcag accgaggacc   1080

cagcagagct catgctggag aattatgaca ccatgtatct ttggaccagc ctgtgctaga   1140

gcagcggctg gaaccctcaa catgcaagac tgagtgagtg cccatggcaa caggatttct   1200

cacccccttt ctctgccacc tgtgggaggg agagaagaca aggtgaggtg ggtgggggag   1260

gtagctgtcc ccagtcaggg cctaaatgag tgaagtgtaa gccccagtcc ctggctgggc   1320

ccttgccagc tctccctgtc cctagtgtgg ggagccagtg aagtagccac acacagctgg   1380

gcttggcatc cctctcagat tgcattcagt ttgtgcttat ggatggacgt gtgtgtgtgt   1440

gtgtgtgtgt gtgtgtgtgc aggcacacac acacattttg ggaggagaag ggtccatagc   1500

tttcagcaga ttctctaact ggtccaccac tcctaaaaag tcaaaaatag atgctctcat   1560

ccagctttt cacgttactg aggagaaaac tgaggcccag aaaggggaag ggatttgtct   1620

aatggtgcat agagtaatca gtaggcctcc ccacactgtc caggcacctt ggtagcaagg   1680

cctgcacggg gcttcatgct ctccctcaaa actcgcctct ggatcacagg cgtgggagcc   1740

cttgggtcac cagggagcca ggaaccaagc agcccttgct gaggggctat gctagtaaca   1800

caaaggagcc catccaaagg gcctgtacat tccagaatgc tgggccattc tgaccagata   1860

atcctgtgag tactagagag gaaccctgc gggcccctga aactaagtct ttccctttgc   1920

tgcctgccca ctccctggga gatgaacccc tcttcatctg ggcattctgg gaaagggcta   1980

tagaatccag gggcccccaga agcaggccag acccaaggca atgccatgga ctctgtccaa   2040

ggccatgggc cagcaggcct cttggagaag agaggtggca gctggggaag ccaggagatc   2100
```

```
tgtagttggg agtgggattc acatgtctga gagaggtgcc cttacccctc cttcccaacc 2160
agcctggccc tgggtaagga tggcttattg agtaccatgg atagcaaggg tgaagtgtgg 2220
gcagctggag ctgttcagtc aagaaggaag ctgattcagc ccagctccca cacccactgt 2280
agtagggacg tttcctttgc tgtggagggg catgcccacc cctgcttctt gtctcagctc 2340
cacccctgac ttggctatgt ggccttggga aagtccattc ccatctctgg gcctcagtta 2400
acttgtctgt aagattgtgg gtgatgggag gtggtggaac tagattatcc gtaagggttc 2460
tttcagctgc agtagtgtaa ccatggatct gcctgagggt agggtgatgg ctttgctctc 2520
agctgtcacc ctcacccagc tggaaggacc ttgacttgcg ggaagcaggg gaagcaagag 2580
tgttatgagc agggccaggg agaaggaggg cagagccacc ctccctaaag caatcttgca 2640
atcgtgggcc tagtcttata gcccaagcct ggccttgggc cccttaacca ggtgttgggt 2700
gtgggaggga tccaggcccc caagctctaa ggccttgaaa ggatgtcctg ttaaggcagc 2760
tactttcaat gtcttgggag tcaggttatg tggggccccc tcccctacct caacccaaac 2820
agctctgctt taatctggtt tatctactag ggctctgcat aaaacttcat ttgaaaagtt 2880
cttgcctcct tccctccctt cctcaactga ggagagggcc aagtcaaccc tggggcccac 2940
acgaagtcgt ttctcggatt tgctccagtc tctttgtaaa gccaggcagg agagtgggcc 3000
catcccacag atacacacat gtcaagcact cttggcccct ccagagccta aagctgcctc 3060
cttccctgac tgacctccca ctctctcctc agcaccttgg gcctgagctg tggtgtcggc 3120
agtggcaact gcagcaacag cagcagcagc aacttcgagg gccttctctg gagccagggg 3180
cagctgcgtg ggctcaaaac tggcctgcag ctcttctgat ggccatccct ggtgcaagtg 3240
ttcatccagc cgtgccaggg caacagccca cccccctagta caactgatgc tccctgagac 3300
aacctgggag acagcctgga tcagccacat caactcagtt gtccaccaca ggggaatttt 3360
gaatgtcttt tgttttttgtt ttgttttgaa aaataataaa caggcaactg t 3411
```

<210> 583

<211> 3713

<212> DNA

<213> Homo sapiens

●

<400> 583

```
gctgctgccc gcctcccagc ccttcttgga tggggtggag gtttccgtct ccttcacctc    60

gccaagcttc tcctgtagct cctttacttg ctgctccaac tgcagtgcgt tcttgttctc   120

attgttctgg acagagagaa gcaatcagca gccacccact gcagctggag accccagaac   180

ttggtgtctg cctcccatgg cactgggaag gctggaggca ggttagaaaa atcaccccct   240

ctctcccaca gccacctggc tcacaggtgc ctttagaagt aacatttcat gtgagggcta   300

cactgcccca ttttagaggt ggggaaacaa aggcccggag ggctagggag gagggcaagc   360

tccccagttt gggcaacgca ccggctcctc gaagacgctc tgtggcttgg ccagctgctg   420

aaggctcttg tgctgctcct gaatcctctc ctcctgcttc cgaagcctct cttcctgctc   480

ctgaatcctc tcttcttgtc gctggttcag gagacttatg cgctgattct ttttgacctg   540

ggcctggagc tctcctgcca ctctctctag ttccttcctc aggtgctgca gctccacctc   600

agagggcact gctggggggct ccgggggcaa gggttcagct gacaaaggaa gcagataata   660

agggcctctg gattctcgga aaagaaaaac cctcctcttg gcgcacagct cctctcaggc   720

tcctcaaact tggcctcact gctaatgatt cctcgcaccc agatggtagc cagtcttcca   780

aagcacattc agagaaagag cactgcgggt ggctggcaac gggccctctt tcctgatggg   840

gacactgaga cactgagact cattgagatg acaagactcg ccgtctcctg gcacagatct   900

ctttccctct gcctcaaagc ccttccatcc acccacctcc ctggggcact ctaagccacc   960

ctcacagccc tctgatgcca gtcctgctcc caggtcatgc cagccccatc ttacccatct  1020

ggttttttgag tttggacaag ctcctctcca gcttctctac ccgacgcata tcttgctgct  1080

tctctttctt taatgtgcaa atctgcccaa agcacaaggg gaaagggcct tggagagagg  1140

ggctggaggc tggacaggct gccctctccc tctctgcccc cacctccaca aagcccagac  1200

ccatgaccac ctctggctct actattccca ttttacagat gcccagaaag atccagtgac  1260

ctatctaatg tgggggggct gaagggtgag atctcacctc ctgcgacatt tttctcatcc  1320

tctgctgcca ccgggccctc tctcctttta gatgttcagc acactcatct ctttctaatt  1380

ggacttgttg aaatgactcc ttcaactgca agaatgggca cagaacttag gaagggctgt  1440

cactggtcct cacctgctcc tggccacctg gggtcatctt ccttccacat aactccctca  1500

gaaaacctca cctgtgtcag ctgcactttc agtagtgcct cctcccgcat ggactgctct  1560

aacttccact ccgtacgtgc tttgctgcgg ctggacaact ggatggtgaa gagtgagaag  1620

tttcaatctg gagagcctgg gcatttccac acagtgcccc ttaaaaggac tagggctagg  1680
```

cccaatatac aactcagtca gtaaagatca aggcatttcc aagcccgtgg tctggttttt 1740

aaaagaacac agtaaagttg gaacggacag ggaatgagat tgaatttata gctggctaac 1800

agaggcccag agagatcaga taatattgct attgttatta ctgttattat taccactgtt 1860

tgaacctttg tggaatactt caccaggtac cgtgctaaca atcccattta atcctcgcaa 1920

ccaccatagg agacagttac tatgattccc tctattgtgg agatgaaaaa acatggagta 1980

tttgaggtta agtgcttgcc taagttcact taggcagagc tgggatataa acacccaggt 2040

ctatccaatt ctctaagccc gtttttcttg ctggggatgg gggcacagat aggaagggga 2100

aaattaatct tttgttcact ttttgaaagg atgatacatt tgcatagtcc aaaactcaga 2160

aggtacagaa gggaagtatc tcccggccat cttgttgctc tctcctgaat tttttatgaa 2220

cccttgcaga catgttttat gtatattatc acagtatgca cacacacaca cacacacaca 2280

cacacgcaca cacgtttcct ctttctacag aaatggtaac atactaaagg tactcttctg 2340

taccttcaca gtagaagtac ccaataccccc acctaggact tgctcaagac cacagccagg 2400

taagggcggg gcaggcattt ggcctccaag ctctgcgtcc agtgctcact ccacacagtg 2460

accccccaact cacccacagc agctgactca gccccaggct gccactaaaa accatacaaa 2520

aaagtagcaa gaaatggcca tgctgccttc tgggcaggac acgccatcct gcagaaggga 2580

cctttaggct cactcctcca tctgcaaagc caggctccca ggggatgggg caggtggttg 2640

gactcacctg gtttgccttc ttcttctgtg tggccatgac attagagaga acactctcta 2700

actctccttt acgctgcaat gaatgttgca ggcagacagc cagatccttg gacttttctg 2760

taatgagaaa gttgagatgg ggcccaaagg actcccctg aagacctgtc aaagtgccag 2820

gttgaaggat gacagggtgc ccagattccc accttcaaag tatctgagag aacgtttcat 2880

gtggtacagg tccgtattta gtttcccttt ctgtatgttc aatgtctgga tttgaacctt 2940

tgggagaaaa gccaagcaag tgctgaaaga gaaggaaaga aaccttctcc ggaggacagg 3000

aggaaactgc acaccctcca ctcacctcta gcaccctttt ggctttctgt ttcttgttgt 3060

ttgctttctt ttcctgtagg aagaagaaga cagagctctt accagggggga ggcagagatg 3120

gcacagcaag agacatgccc ccagaatgcc accaatgccc caggacaggc ccacccatgg 3180

gaccaggtta tcaggggccc tgtggggatg gggtggaatc tgaagggtga gccttcatcc 3240

ccaggctggg agtgggtgag acgagactgg ggcctgtatg tctgagtgcc ccccaaaccc 3300

agcagtcatg ttgcgaggaa acgaaatcac gttacttctt ccagctgatg ttccacttgt 3360

ttcttctgtt gtttctgtgg ggagagtcaa ataaggtgat ggaggggtggc cccctcaact 3420

```
ctattccccca gaccaggaag tggtaggcag gggccaggaa tggattttaa aggcaaagtt  3480

ctcagacata atgggaacac gaaccggtaa actctcctca agctcccaag gacagaggat  3540

ttgggtcttt gttggctttt gcccacagcc acagaactca aagtctgaat ctggaatctc  3600

ttgagaggac agcaatataa acctctagag atggagtttc agaaaggccc ctccttctgg  3660

caacttgtga tttagagaag tgggttcatt caataaacat ttactgagca tgt          3713
```

<210> 584

<211> 3339

<212> DNA

<213> Homo sapiens

<400> 584

```
gaataactca gttttaggta agcctcccct atatcctaga ataacctgcc tcttcggctg   60

ggaagcggag ggaaccttct cttccttaaa gacagggtct cgcactgtca cccaggctgg  120

agtgcagtgg tgcaacccca cctcccgggt tcaagcaatt ctcatgcctc agcctcccaa  180

gtagctggga gtacagcctg tggagcccag gcctcttgga gcatctttgg ggctgacgca  240

gcggaggttc cgggcacacg tggccactcc cagcaggagg ctgccatgcc ccacattccc  300

gaggacgagg agcccccccgg agagccacag gcagcccaga gccctgccgg ccaaagttca  360

cagtccccac aagaggcttt ctcaccgaca cttgaaggtg tccactgcct ccctgacatc  420

tgtggacccc gcggggcaca tcattgacct ggtgaatgac cagctgccag acatcagcat  480

ctcagaggag gacaagaaga aaaacctggc gctgctggaa gaagccaagt tggtgagtga  540

gcgattcctg acccgccgtg ggaggaagtc caggagcagc cccggagact ccccatcagc  600

tgtttccccg aacctcagcc ccagcgcttc tcctacatcc tctcgaagca actcacttac  660

agtccccacc ccgccaggtt tggatgtgtg cagtggcccg ccatcccctc tgcctggagc  720

accaccacag cagaagggggg atgaggccga cgtctcttca cctcaccctg gcgagcctaa  780

cgtccccaaa gggctagctg acaggaagca gaatgaccag aggaaagtgt ctcagggcag  840

gctggctcct cgtcctcctc cagttgagaa gtccaaagag attgcaatag aacaaaagga  900

aaacttcgat cccctccagt accccgagac cacacccaaa ggcctagctc ctgttacaaa  960
```

cagcagtggg aaaatggccc tgaacagccc tcagcctggc cccgtggaga gcgagctggg 1020

gaagcagctc ttgaaaacgg gctgggaggg cagccctctg ccgagaagtc caacccagga 1080

tgcggcagga gtgggtcccc cagcctccca ggggagaggc ccagctggag agccgatggg 1140

gcccgaggct ggctccaaag ctgagcttcc acccactgtg tcccggcccc cgctgctgcg 1200

agggctttcc tgggacagtg gccctgaaga acctggcccc cggctgcaga aagtgcttgc 1260

caagctgcca ctggcagagg aagaaaagcg ttttgcaggc aaggccggcg gcaagctggc 1320

caaggcccct ggtctcaaag actttcagat acaagtgcag cccgtgcgga tgcagaaact 1380

gaccaagctc cgagaggagc acatcctgat gagaaatcag aacttagtgg ggctcaagct 1440

tccagacctt agtgaagcag ctgagcagga aaaagggctt ccttctgaac tctccccagc 1500

tattgaggaa gaagagtcaa agagtggctt agatgtcatg cctaatattt ctgatgtgct 1560

gctgcgcaaa ctgcgggtcc acaggagtct ccctggaagt gcccctccac tcactgaaaa 1620

ggaagttgag aacgtgtttg tgcaactgtc cttggccttt agaaatgaca gctacactct 1680

ggaatctaga attaaccagg ctgaaaggga acgcaacctg acagaggaga acactgagaa 1740

agaactggaa aacttcaaag cttccattac gtcctcagct tcactctggc accactgtga 1800

gcaccgggaa acctaccaga agttgctgga ggacatcgct gtcctgcacc gcctggctgc 1860

ccgcctctcc agccgagctg aggtggtagg cgccgtccgc caggaaaagc gcatgtcgaa 1920

agcaacggaa gtgatgatgc agtatgtgga gaatctaaag aggacgtatg agaaggacca 1980

tgcggagctc atggagttta aaaagcttgc aaatcagaat tcaagccgca gctgtggccc 2040

ctctgaagat ggggtccctc gcacggcacg gtccatgtcc ctcacgctgg gaaagaatat 2100

gcctcgccgg agggtcagcg ttgctgtggt tcctaagttt aatgccctga atctgcctgg 2160

ccaaactccc agctcatcat ccattccctc cttaccagcc ttgtcggaat cacccaatgg 2220

gaaaggcagc ctacctgtca cttcagcact gcctgcactt ttggaaaatg gaaagacaaa 2280

tggggaccca gattgtgaag cctctgctcc tgcgctgacc ctgagctgcc tggaggagct 2340

tagtcaggag accaaggcca ggatggagga agaagcctac agcaagggat tccaagaagg 2400

tctaaagaag accaaagaac ttcaagacct gaaggaggag gaggaagaac agaagagtga 2460

gagtcctgag gaacctgaag aggtagaaga aactgaggaa gaggaaaagg gcccaagaag 2520

cagcaaactt gaagaattgg tccatttctt acaagtcatg tatcccaaac tgtgtcagca 2580

ctggcaagtg atctggatga tggctgcagt gatgctggtc ttgactgttg tgctggggct 2640

ctacaattcc tataactctt gtgcagagca ggctgatggg ccccttggaa gatccacttg 2700

ctcggcagcc cagagggact cctggtggag ctcaggactc cagcatgagc agcctacaga 2760

gcagtaggaa acctcacacc tagccagtgc cctgctctga gacactcaga ctaccaccct 2820

ttccccaagt ataacgtcag gcccaagtgt ggacacactg ccgcccatcc catcaggtca 2880

tgaggaaggg ttcttttaac actcggcact tctgtgggag ctattcatac acagtgactt 2940

gatgttcttg gaggatcaac aaaactgccc tgggaaagca tccagtggat gaagaagtca 3000

ccttcaccaa ggaactctat tggaagggaa ggtctcctgc ccctagctca ggtggctggg 3060

gagaactaaa acaccttcac tggtggttgg gggtaaggag cggggcacgg gggaggagga 3120

ggtaggggc agtaaaaaac ttactctctt ttttcctctc tgtaattggt tatcaggaag 3180

aatttgctta atgactaaca ccctaagcat cagacctgga atttggagtt gcaaagtgac 3240

tatcttccca tttcccatct cattttcaat aacttcagcc tcccattctt tcctttggaa 3300

tgagagtttc tttttacaga agtaggaaag gcttctcag 3339

<210> 585

<211> 4410

<212> DNA

<213> Homo sapiens

<400> 585

cacctctgga aggaccggca tccacacaca catacagccg cgccttttcc aggaagcagc 60

tatccgtagc ttttatcacg gctccaagac tctccccagc ccataaagct taggcacccc 120

tgttttaaaa agtaggactg ttggaaacca cctcagccat aactacagtc agaagaggaa 180

gggccctggt gtcagagagg aggggctggg accttcacct gcagcttgag gcgatgggct 240

tcaatgggga tgatcttcag gatcggcagg tccacaacca gcaccttggg tttgctcttg 300

ataagacatc cttttctat atcccagtca gcaccttcca ggtacagtcc tgagacaaag 360

catcctaggg acacaaggca gagactggat acaactggag catgcacagc ctgccacgga 420

gtggctctat caggcgcaca cacagcgaca cacaggccac tggctggcct cctccccagc 480

gcattgggga cagcccaggc ccttctccag catttctgtc ctgcccacct tccctctgtg 540

gaggagcagc ccagacagga gaccctgtgg ccctgcccca tggcccagag aaatgggtgt 600

ggggcggtgg cctctccccc aggaatcctc attcctgggg catcaaggcc cacggactta 660

gaccaccctg ggcccccagg ctagaaagat gcatggtccc agagtcagaa tgggcaccat 720

ggcaacccca gctaccctgt gagccgaagt ggctggggag caggaagtcg aagcctcaca 780

gagaaagtgg tctccgggga ggaggaccca gcagatgtgc aaagagagga acacactcct 840

gtggccccag agagagtggt ggcccggaca cctgccacct cccctgccac tgagacctgg 900

agagtccctg catctttacc ggattttgta gtccacttcc ttgttccgga agaagtggaa 960

tggctggaaa gtatcaaaaa tgaagtcccc caggtactca tccatgtaga tggtcaggat 1020

gcggcgatca aagctgtcga tggcccgtcc tccatacatg acctgaaatt agagggcctg 1080

agagccagcc aggagctcag aacctactgt gtgcaccctg ggggcccggg gccagaggct 1140

cacccagggt caagagactc cagcagcctg gctgctgcaa ggcttgaacc tgttgacttg 1200

cataaccttt cgggccactg ttcacacaat tgatctgtgg ctttgctggc ttcccaaggg 1260

atagggccca aagcagtaag aagccctcag gaagtgttgg gagctcctgt gcagcaggca 1320

aagtcccccca aacacatcaa acaaacagct gaagaagcca gcagctgctt ctgtctttgg 1380

aattgatgtc actgcctgag ccgtgtgcag accaccgggg atgcttcctg tgagctctgt 1440

atacagcaac agctgaggca aggggctaga ggatgccttg cctggatccc cagccatgga 1500

tccagctcag ggaacctcca tgtgaacaga gctcacttag acaaagaac aaccaggtga 1560

gagcagagag aattgtcaca gaaacccaag gggaacacag gggcagaaga ggctggttct 1620

gagggctcag aggaaaatag gggcacgagg ccacagctct gtagccccag aggcacctgc 1680

ggaaggatcc ccggtcaccc ctacctctcc aattaggtac ttgaggctgc cccacgggat 1740

ccttgggtcc cgttgctgga aggctttcgt taagtacgtg ttcagaattt ccatgcagac 1800

cttgaaagaa gagaacacgc tcagttatac tgaaacccac caagctgttc acattctgat 1860

actttctga aaaggctgct gggaacggtg caaccctgct gtggttgaac ccggaggaaa 1920

gtcgggagga agtgggccgc ctaaggaagc catttccaag gagaagcagc cactgtcacc 1980

tggaagtcag actcattgaa gtcatagtac acgttccagc caatcttccc aaacttcctt 2040

ctctcctgca ccacagcatg aaagaacgcc agcacgtaga ccagcggctt gaaggcaggg 2100

tgcgggcact ggtccagcat ttcgtgagag atcttgaagt aagttgccct catgttgagt 2160

ttcagcccat tgggtggctc ggtgacaacc ttcagaagag aagaaaacac acagtgatgg 2220

agaccgcagg cccacaagct tggaagagtg tgcacaatgc aggcactgcg ctttccttcc 2280

tctctacgga gccatctgtc tgagacctcc aatagctaaa gtctcttgtc cagggcccag 2340

gctgagaagt taaaggacta gatgttctgg ctctcagggt caagggtcaa gagtctttga 2400

ccttcctctg aaccatgaga tcctttacta tatataaaat gaaagtaaag tcttccctcc 2460

acctcccag agagagagag agagacagag aatgacaaaa cctttccaaa agaatttccc 2520

ggagaataaa ttaaatgggg catgtaaacc acgcgaaact cctgcagtca gcactagcga 2580

actgcaggct gtgtgtgggg ggggggccg tgaagtttat gaaaagtagc gtagatattg 2640

ttagggacac atgcagaatt ggtagagata ggcctgggag tcacaaacac ccaacccagg 2700

acagcggctc cctctaaaga gagaggtggg attgagaagg gtttcaaccg caaggtttca 2760

cctgcagcct aaggtttatt tctacacaga caaaggcaca ccccggcccc agagcagcat 2820

gcaggtgttc tgagaagctg cgtgctggca tgttgatgtc catcctgaag ccagaccttt 2880

agggacttct gcagaatccc aatggggaag cccttggtgg ggtccgtggt gagccacagg 2940

cggaagtctg ggtggggctt ggtgatcctc tccagggact tctccagatc tttcagccac 3000

ttgaccagga ggtggcagtt ctgcagcatc agccactgcc cccgagccac cgccgtctcc 3060

agcagctgca gggccacctg cgccggggga gagggaagag gagaggggtt ggcatccaaa 3120

cccaaccccg tgctctccag agacccactc cacacccaca gaagggcgat ggcagctcca 3180

gcagaagcca aaagcaagcc gaggatccag gagctacagg tggagccttc aaataaacca 3240

tctttgagaa accccatggg ccccgtgggt gcactgagct ggtcacaccc agcctggaag 3300

atgggtgagc attttgcact catctgcctc cctggccctg gaagtcccag ctcctcccac 3360

acagtcgctc ctgtcccctg aggactcctg agcagggctg caagagacca gctaaagccc 3420

accaggaagt cgggactgtc ctggccactg taagatcttc agggccctag gcctggaaaa 3480

caatcaccat gtcccctccc aaatgtaatt caaagcacaa acaagctaaa cacccaaatc 3540

aagccttgct ttctgaaatg gcttaaaaca catgagtgct ggcgttacaa tagcttattt 3600

cagtgttgtg gttgagagag ctggcccgcc ttgctggtgc ccagggcttg cctcctgggc 3660

catccagcat gggtattgcc atcctcatct cacccagggg ctttcagcag tagaggggct 3720

tacccaaagc ctcacagttc atagcaaagc caggactggc agtcagctcc ctctgacccc 3780

aacacgcatg cctgcaacca tcacacttac tgacgcacag acttttcctg caagctttgt 3840

cccacattgt actgaacttg tgtagcaagt tctagcaggg agcactgtga tgcagagagg 3900

caagacctca gcaaagaaag ctcactggct cagaaaggta ggaggatttg caccacagtt 3960

ctgtcctgaa tggtcctggg ctcagcctct ctccacccac tcccttggcc atgcaattgg 4020

ggccataata atcctgatcc acaatgaggc tgttcaggga ctaaggaagg taaggactgt 4080

```
gtgtgaaagg gctttgaaaa cagcacagcc tgagcatcgt gtctcatgcc tgtgatccca   4140

acactttggg aggccgaggt ggaaggatcg cttgagccca ggagttcgag accagccagg   4200

gcaacatggt gacgtgtttg tatttttctc tacagaaaat accaaaaaaa attagccagg   4260

cgtggtgacg catgcctgta gtctcagctg ctactgggga ggctgaggca ggacgatcac   4320

ttcacaatcg ggaggtcgag gctgcagtga gctgtgttcg cgccactgcg ctccagcctg   4380

ggtgacagag tgagaccctg tctcaaaaag                                     4410
```

<210> 586

<211> 4142

<212> DNA

<213> Homo sapiens

<400> 586

```
tttaggaaag gaagcaggat agatgggtga ctgccagtgt tggtgggggca ggtgggcagc    60

agtgggtgcg tggcgcagca gaaacacagc ctccagagtt tgggccccctt ttccgaagct   120

caccaggcta tctgcccatc ttttcctccc cctccctcta actgcctccc tcccctggtc   180

cctagcacag ctccagggca cccctggagc agctggagaa tctgggttgc ggtccacccc   240

caggtggcgc tgtgctcccg caccaggttc aagtgcacta gaggagtgat gacatcatcc   300

aggacggaaa cagcatcccc accgcgggag caccgaggaa gagggcagct cacttgttgc   360

tcaggacagt agggagtggt ttttctctct ggctaaatca tgtttgaagt ttggtagaaa   420

gggcttccta aggtgacagg ttctattgga cccttaagat ttggaggcag gttgtttggg   480

ttcaggtgag cgtccagtgc tttcctgcag caccgtcaca gccttatttc agtgagggaa   540

ggaaggggag ctgttaatga gaagcagttc tatggcctga agacctgggc tcaaaacaaa   600

accaacaaac aaaacagacc tgagctctga cttttattag ctgtgtgatc atggatatat   660

tagttaacct ctctgggcca aattctatct gcaaaataga atattggtat ccacctcaca   720

gagttgaagg atcagctgaa gcaacctaaa gcatctagct agtgcccagt gcccagcagg   780

cacagggggg tgcagtgggg ctgacagtga gggctgacag tggaagctct agctggcctt   840

agctccagct catacccttt aggtccagga gccagtgtgt gtctgtctcc tctcctctgg   900
```

gcccagtgat tgcttaggtg actggggtga caggcaagtg ggtggaggga atggagaaga　960

gtgtaccctg ggatctgagg gctttacccc caggactaga ctgccctctg gttttggtca　1020

gacctagcac agcgatcttg cttcctagct ggggcacccc accctcacct caaagatggt　1080

gaaactgctg tgcctcctgc tgttgaggca acctggaggc agagaaacct acaagtgaca　1140

cagacccaag gtggcagttc cacagtgcca aggggtggca gcaccttcaa gagaatgaaa　1200

ttcagaaaga tgcctttcac ctacacccga tggtgggcat ggcagcattg tcagcattcc　1260

tgcagttggg gcaggaagtg gaattggtga gcaggtgggg agggctgggg aagatgaggc　1320

ccctctgagc cctagggcac acagatatgg gtgctattct ccaaatagtc actccacttc　1380

tctgcctgcc gccttcctgg gcctgtgact gctgtgagga cctggccctg agcccatggt　1440

taggcagagt catggaatga gcatccctga acatgcctaa tatagccatc ccagcaccct　1500

gggctccact ctgccccagc acccctgaga acaactctgg ctgctgactc caggcagcag　1560

gactggttca ggagcagacc tagtagaggc ctggccttct agacctggac aaccaggtca　1620

gtggagagtc ttctgcttag agttcagatt ttcctccatg ctgcactttc tgaggatgtg　1680

aatttatttc ttggccaact caaatagtgt ggcagggaac ctgagcttct agagtcctcc　1740

agggagccca gggttaggat caggactcac agttcaggac aacaggtggg gcacagccat　1800

tcacagctaa aggtttgtat atattatcaa aatcttatgg aaaaacagat acacagctat　1860

tcatacagca gcaggtgggt gtgaggaaaa tgtctgcttt ggcatcaaac cttcaagtcc　1920

agctgctgtc tgtcccactc ctcctgtctg gagcctactc ccatcaggca ctgtgcatcc　1980

aggccactgc ccctgccaca tcctctaatt agcctggact ttggggtatc ctcagcccct　2040

ccccacgctc ccctttgggc ccccatgcct ctccatcttt ctgccatttt cccacacaga　2100

gtgccactgg cccagcagct ttgccccgtg ggctcctcag aggcctgaat cctggccctg　2160

gagggcagtg gggctggggt ggatgtggtc cctgtgggac atctttcctg gatcacaggc　2220

cttttgcagc ttgccagcta catgggccct ggacagtgcc atcttctcag tgatgtgcta　2280

aaaggactct tcttgtccag aaacctgagc tccatgtact aaagcaaaat ttggagagcc　2340

tcagagacaa gaaaaggaaa gtgagaagat ataaggcatc cttccttgag cgtgacccag　2400

gcctggactc tcccatggca gaatagggac atccacagca ggtcagccag ggatggggtg　2460

ggcagggtct gtgtagccct gggaggtgag gcctgagcag tcatggcatt ggcagatggt　2520

gcctggcagc ctggtcctac tgaagcagtt tgggcacttc cacctgtagg ggcaaagtag　2580

agacaggtta gagaagggag ctcagccacc tcacctccct ccctactgga aggacacaca　2640

```
agacactgca atatgttatg tctgtggaat gtgaatgagg tgttgacact gagggagcat   2700

ttttcattgt ctgtaaaaat tggatgtcat tgagtgacca ctggaattac aattgagatt   2760

ttcctttatc tcatgatacc ttgtcccaga tgatgttgtg ggggttgggt atccaaccaa   2820

atggacaaac gatcgtggac tttgtcaccc aggccagact tccaggggag gcagggcttg   2880

gagaagtagg gtgtccaggg atggctcctg tgtccatggc actggctagg caaaggtaga   2940

ctctcctgag aggtgaatct cccagagacc tttcggatgg actgacctgt aggacttggc   3000

tggtcctgag aggaggctaa gtaaaacgtg gatcattttt gtttggggaa atggagaaga   3060

cttaaaggaa ggacccgagg caaaactact ctgtagaggc cattttttcca ttttaaggag   3120

aaacaggctt cattgcagaa tgaaagagaa gcatggagtg aggtattaaa ggaagctcct   3180

taaaggaagg gtagagtctc agctctaggg gatatacagg tgtgacctgc ctgcaggcag   3240

gaggatgcat gagatgacct gaagtcccct atgggccctg ggagtctata tcatctgcag   3300

ccgacataag ctcctctgca tgccttccct tttgcagtcc taccctctcc tccaggccct   3360

acccagcccc gccctgttgg ctcatgccca caactactta acttcttgag ctgcttgagg   3420

ttgctggagc ggatggcagc caatagctgg tcacgggagt tcttctcctg ggcagggagg   3480

actttgtctc ccatcttcct ctgggtagct ggtgagagtg aattcttcag gttctccatg   3540

ataaggggtg gagccaaggg aggggagggg ggtggtgggg cagctggagc acccccttt   3600

ttgggtgagt tctttggaga gggctttgga gatggttgag gtgaaggttt tggggagccc   3660

ttagccacgg ccccggcctt gggtacctcc agcagatcct tcttctctcc cttggcttcc   3720

tgtgcctgcc tttgctcctg cagccgcttt tgtctctgct tgtccatgtt gcggctgagc   3780

agattggtga cagtcattcg gggcccggcc agctcaaaat ggtagcccag cttgagcagg   3840

gtagtattct ccttcagcag cttggcgatc tccatctccg tcttgcctcc acagatgtgt   3900

cgctggttgt ggaagcggag ctcggtcagc gtgttgttct ggaggagggc ccggaagatg   3960

gccaggatgc ctttgcctgt gatgtggttg gagtccaggt tgaggctggt gatggtcttg   4020

ttggccttga gcatgatggc aatggcaaag ccacgtggt catcggctcg cgtgttggcc   4080

aaggcgaaca gcttaaccac agtgttgaac tccagagcct cagtaaaccg gaccaagatc   4140

tc                                                                   4142
```

<210> 587

<211> 3955

<212> DNA

<213> Homo sapiens

<400> 587

```
caagcaagcc accttcttac gacattaaat ttggtggacc aagcccccag tacaagcgct    60
gggggcccagc acggccaggc tctcaccttt tagagcagca cccccgacta atccagcgaa   120
tggaatctgg ctatgaaagc agtgagagga acagcagcag ccctgtcagc ctggatgcag   180
ccctgcctga gagctcaaat gtctacaggg atccaagtgc taagagatca gctgggttgg   240
ttccttcctg gcgtcatatc ccaaagtcgc acagcagtag catcctggag gtagactcca   300
cagcatccat gggtggctgg acaaagagtc agcctttctc tggtgaggag atatcttcta   360
aaagtgaact ggatgaattg caggaagagg tggccaggag ggcgcaggaa caggaacttc   420
gaagaaaacg ggagaaggag ttagaggcag cgaaagggtt taaccctcat cctagccgct   480
tcatggactt ggatgaactg cagaatcagg ggaggagtga cggctttgag aggtccctgc   540
aagaggcaga gtcagtgttt gaagagtcac tacatctgga acagaaagga gactgtgctg   600
cagctttggc tctctgtaat gaagctatct tgaacagcct atcccgctcc aagtattgtt   660
aagccaagag gcccaactgg aatccggcat ggatacagag tttggggcca gttctttctt   720
ccattcacct gcttcctgcc atgagtcaca ctcatcacta tctccagagt catctgcccc   780
acagcacagc tcccccagta gatctgcctt gaagcttctg acttcggttg aagtagacaa   840
cattgaaccc tctgcattcc acaggcaagg tttacctaaa gcaccagggt ggactgagaa   900
gaattctcat catagttggg agccattgga tgccccagag ggtaagctgc aaggctctag   960
gtgtgacaac agcagttgca gcaagctccc tccacaagaa ggaagaggca ttgctcaaga  1020
acagctgttc caagaaaaga aggatcctgc taacccctcc ccggtgatgc ctggaatagc  1080
cacctctgag aggggtgatg aacacagcct aggctgtagt ccttcaaatt catcagctca  1140
gcccagcctt cccctgtata gaacctgcca ccccataatg cctgttgctt cttcatttgt  1200
gcttcactgt cctgatcctg tgcagaaaac taaccaatgc ctccaaggcc aaagcctcaa  1260
aacttcattg actttaaaag tggacagagg cagtgaggag acctataggc cagagtttcc  1320
cagcacaaag gggcttgtcc gttctctggc tgagcagttc cagaggatgc agggtgtctc  1380
catgagggat agtacaggtt tcaaggatag aagtttgtca ggtagtctaa ggaagaactc  1440
```

ttccccttct gattctaagc ctcctttctc acagggtcaa gagaaaggcc actggccatg 1500

ggcaaagcaa caatcctctc tggagggtgg ggatagacca ctttcctggg aagagtccac 1560

tgaacattct tctcttgcct taaactctgg gctgcctaat ggtgaaactt ctagcggagg 1620

acagcccagg ttggcagagc cagacatata ccaagagaag ctgtcccaag tgagagatgt 1680

taggtctaag gatctgggca gcagtactga cttggggact tccttgcctt tggattcctg 1740

ggtgaatatc acaaggttct gtgattctca gcttaagcat ggggcaccta ggccaggaat 1800

gaagtcctcc cctcatgatt cccatacgtg tgtaacctat ccagagagaa atcacatcct 1860

tttgcatcca cattggaacc aagacacaga gcaggagacc tcagaattgg agtctctgta 1920

tcaggccagt cttcaggctt ctcaagctgg ctgttctgga tgggggcagc aggataccgc 1980

ctggcaccca cttagccaaa caggctctgc agatggcatg gggaggaggt tgcactcagc 2040

ccatgatcct ggtctctcaa agacttcaac agcagaaatg gagcatggtc tccatgaagc 2100

cagaacagtg cgtacttctc aggattcatc aaacgtgagg aagcctttgg aaaccgggca 2160

ccgttgttcc agctcctctt ccctccctgt catccatgac ccttctgtgt ttctcctcgg 2220

tccccaactc taccttcccc aaccacagtt cctgtcccca gatgtcctga tgcccaccat 2280

ggcaggggag cccaatagac tcccaggaac ttcaaggagt gtccagcagt ttctggctat 2340

gtgtgacagg ggtgaaactt cccaaggggc caagtacaca ggaaggactt tgaactacca 2400

gagcctcccc catcgctcca gaacagacaa ctcctgggca ccctggtcag agaccaacca 2460

gcatattggg actagattcc tgactactcc agggtgcaat cctcaactaa cctacactgc 2520

cacactacca gaaagaagca agggccttca ggttcctcac actcagtcct ggagtgatct 2580

tttccattca ccctcccacc ctcccattgt tcatcctgtg tacccaccat ctagcagtct 2640

tcatgtaccc ctgaggtcag cttggaattc agatcctgtt ccagggtccc gaacccctgg 2700

tcctcgaaga gtagatatgc ccccagatga tgactggagg caaagcagtt atgcctccca 2760

ctctggacac aggagaacag tgggagaggg gtttctgttt gttctatcag atgctcccag 2820

aagagagcag atcagggcta gagtcctgca gcacagtcaa tggtaaaggt tattcctttc 2880

ctttcctgga gctacacctt tctttgtaaa actgtactgt gggccgggcg cggtggctca 2940

cacctgtaat cccagcactt tgggaggctg aggcgggtgg atcacgaggt caggagattg 3000

agaccatcct ggccaacatg gtgaaacccc gtctctacca aaatacaaaa aattagccag 3060

gcgtgacggt gcgtgcctgt agtcccaact actcggaagg ctgaggcagg agaattgctt 3120

gaacccggga ggcagaggtt gcagtgagcc gagatcgcac cactgcactc cagcttggca 3180

atagagtgag actccatctc aaaaaacaaa acaaaacaac aacaaaataa actactgtgg 3240

cagcgttggt accctgcatc actgccatgg ttgtgctatt ctcatctcaa catagaattg 3300

gtgggttctc ctaagggtgt caggaacctc taaaaagatg tgattctttg ggaggggata 3360

tttgaaattc caacttccat tccccctagc aaaaggaagc agctgctgtt taagggtttt 3420

atctgagcca ctttaaagat gaatccatgg tattactctg gatactagcc attccttagg 3480

attttaaggt cacattttat tcctggatgc tttatgtccc cacctccacc tgagccctca 3540

tcctctgttc cctactatac tcccaacttc tactctttgt tttatccacc tatccctatt 3600

acctgaccct ttgtcttccc tgtctcccat ccttgggggg acatgtagcc ctgtggtcat 3660

ggttctgatg acatcatcag ggcagccccc ctgcccaggt attatggcct gtcagcattc 3720

cctgtgccct ccaaacctta ggcctagaat gcggagctgc caacataaca ttcacccttt 3780

tgaacagatg gagtcaggca cactaacaca gccttctgtc ctcaataaca cagccattat 3840

tgccacttgc tcagtcgtca atgtaaaccc tcagagtcag ctgaactatt ttaggccaaa 3900

catactgttt ttgtaaagta tttttcatta ataaatctat aagacagttc tattt 3955

<210> 588

<211> 3765

<212> DNA

<213> Homo sapiens

<400> 588

aaaaggaggc gtgcagcgag catgaaccgg ctgggctgct ggcccgcaag gagcctgcca 60

aggtcaggca ggggcagtgg gcagaggagt cttggacttg ggggccaccc ttcaggtccc 120

aggcatccag gcaccccagc agcgaagagg acatgggagt cccctggtgt gagggccaga 180

gactgtccac tgtctgtaag tcttctaagt agatgtcagg gttctgggag gaggcctgca 240

gggggctgag ggcccagggg gagcccctcg gactccctcc cacaagtgga ctctgctatc 300

tgcttcctgc tgggctggcc tacactcagg ccgtgggctg tggagagccg ggccgtggca 360

caggcgtgga gacgaccttt ttggcctggc cccggccctt tccttcacat tgtgaggcat 420

ggattcttgc ttcttctttt tccccacccc gagtctgtgc cacatctgct ctgggaagat 480

gtggtctgtg cttggccatg aattcccaag gcttgaagca gcaagggctt tgagggagag　540

ggctttgagg gagagggcct tgagggagag ggctgtgggg cagaagcaga gaaggagaaa　600

taagcctccg gccaaggtca ggttgagcag gagagccttg ggttctttgt gggacagcac　660

agagctgggg gtcaggcgag ctgtgcccag caagtaggca gcggctggat gtgacaaaga　720

cccagaggag aaacacagaa gaggggagag ggtctggaag ctggggaaag caggatggtc　780

gggaaggcct ggcccctcac ccattcccag gaacggggc cttgggcccc agaagggcac　840

aggcgggagg cagccgaccc ctggtggcag cggcagcagg cacgggaggg cagaatgcag　900

ctggggtgtg cgtgggtggc agcaaggagg ggcggaggga ggaagctggc ttcctggagc　960

cttctcagcc ctcaaagaca gaccgacaga cagacagaca gctggcaaga ggcagcctgg　1020

gggccacagc tgcttcagca gacctcatgg ctgagtgagc ctccctgggg cccagcaccc　1080

cacctcagca tggtccaagc ccatggggg cgctccagag cacagccgtt gaccttgtct　1140

ttgggggcag ccatgaccca gcctccgcct gaaaaaacgc cagccaagaa gcatgtgcga　1200

ctgcaggaga ggcggggctc caatgtggct ctgatgctgg acgttcggtc cctgggggcc　1260

gtagaaccca tctgctctgt gaacacaccc cgggaggtca ccctacactt tctgcgcacc　1320

gctggacacc cccttacccg ctgggccctt cagcgccagc cacccagccc caagcaactg　1380

gaagaagaat tcttgaagat cccttcaaac tttgtcagcc ccgaagacct ggacatccct　1440

ggccacgcct ccaaggaccg atacaagacc atcttgccaa atccccagag ccgtgtctgt　1500

ctaggccggg cacagagcca ggaggacgga gattacatca atgccaacta catccgaggc　1560

tatgacggga aggagaaggt ctacattgcc acccagggcc ccatgcccaa cactgtgtcg　1620

gacttctggg agatggtgtg gcaagaggaa gtgtccctca ttgtcatgct cactcagctc　1680

cgagagggca aggagaaatg tgtccactac tggcccacag aagaggaaac ctatggaccc　1740

ttccagatcc gcatccagga catgaaagag tgcccagaat acactgtgcg gcagctcacc　1800

atccagtacc aggaagagcg ccggtcagta aagcacatcc tcttttcggc ctggccagac　1860

catcagacac cagaatcagc tgggcccctg ctgcgcctag tggcagaggt ggaggagagc　1920

ccggagacag ccgcccaccc cgggcctatc gtagtccact gcagtgcagg gattggccgg　1980

acgggctgct tcatcgccac gcgaattggc tgtcaacagc tgaaagcccg aggagaagtg　2040

gacattctgg gtattgtgtg ccaactgcgg ctagacagag gggggatgat ccagacggca　2100

gagcagtacc agttcctgca ccacactttg gccctgtatg caggccagct gcctgaggaa　2160

cccagcccct gaccccctgcc accctccggt ggcccaggtg cctacctccc tcaagcctgg　2220

```
gaaggtgggt ctggggaaag tgggccgagt gatctggggg taccccttgg gttggtgtgg  2280

ggaaggagtg cctccttagt ggtgcttgca gtcacaggaa gcagcagcag taaggacaag  2340

gggccggatt ccaggtcttc aacactggcc actcctctgc ttcctctgtt ggccccagat  2400

ggacagtaag gggaacctcc aatgtctctc tgaacttaaa gacaggagct ggcatttatg  2460

acagacaaag aaagaagccc aggtgtcctg gtgttctctg agacactctt tgtgagcttc  2520

agtttcctgt tctataacat gaacataagt gcttagctgc catgagggaa aagtaatgag  2580

agaagtttct agaagccact ccagccactc cttcctgggg ctgacaaaag ggtgattcca  2640

agatcatcct tcacccgagg tcctgcccaa gcacaggcca gatgcaagaa tggggaaaag  2700

tctggtcctg atctccaagt ctcaacatcc tatcagtgac tctgctccct gaccacacat  2760

cggaagggct ggatgacccc aatcaaaaga aagaacaagg actctggtta cccttgcctc  2820

cacccatgtg tcataagagt aggctacaga ggtgaccagg cctggcagtt gaaatctctg  2880

gaagagggaa catgtgggga ctactcagag gcaaagagga gctgctcctg cctccatggt  2940

tgctggcctc tcccaccaac tactcttagg gaggctaagc agtctctgtt ttgcttccat  3000

ggctcaaata ataccctggg tatgcaggac ccactatacc ttgcatttgc tgagtacacc  3060

tagagagctt ggctgtttcc aaaaacaatc agggtcataa ccatccatgc agacatggag  3120

gctcggctga accaggactc ctcactgtct acctgagaga atgagcaccc ctcatccatc  3180

tcagcatcaa cacaatttcc aggggacctc aggtctacct caggactgaa cgccacacct  3240

caggattcct cctccttgaa tctgagactg gctgcccatt ctgagatggg gatgaaggta  3300

agatgccgca tcaccaggca cgccgcccct gacagctgcc ttgataccag ctctctgtgg  3360

aaaccccga ggagttggct ctggagaaca gctgggcctc ctcactcagg acttctctcc  3420

tgaagaacac gcagtgctaa aactgaggat gatttcccta atgcttctgc ttggccttat  3480

ggaggagctg ctccttcctt acagccttgg ggatggactt gcccacacct ccacctcccc  3540

tgagccctgt gagaggcacg actgtctatg ccaatgaggc tcggtggggg gctctcaagt  3600

gcctgatcct gccctgggct cagagccagc ccagagggaa gcaactgcac agccccacag  3660

gccctccttg gcactgtccc cccaacccca tctcagagct cagagggtac aagctccaga  3720

acagtaacca agtgggaaaa taaagacttc ttggatgact gactc             3765
```

<210> 589

<211> 4528

<212> DNA

<213> Homo sapiens

<400> 589

ttctctactt	gactgctgac	aagtttaaca	aagtgtgtgg	ctcttctcct	tcctgcttgg	60
gtaagaataa	aggtgttaaa	actcatataa	tcccttcctt	tgcatgtttg	ttctctgtgt	120
cttccaatgc	attttttaat	taaaaaaaat	acatgtcttt	tgcttttca	gaacatatat	180
aatccaaaaa	gattagtgac	gttttgacag	tcgtcagaac	actaaccatt	agtactgcat	240
tggagtgatg	ctcacttttt	tcagagtagc	atctctaaag	tactttctaa	aaataaaaag	300
gtccctgctt	tggcctgatt	tttgcttctg	gatcatcagg	tgctttgccg	tgaagtgtgc	360
aggagctgcc	gcctgtctgt	gtctctggct	gctccactgt	gttcagtcag	tgcatggcca	420
tctccctcgt	gccatgttct	ggcttcacta	acactccccg	tctcgctgca	gtgtaacacg	480
tctaactttt	gcttctatcc	catttcactc	atgttgcagg	aaccaggagg	ggttgggacc	540
catagttcat	gatcgaaagt	ctcagacatt	gcctgtttcc	cgtaacagaa	caggaatgat	600
gcatgccaga	ttgcagcagc	tgggcagcct	ggataactct	ctcactttta	accacagtaa	660
gtcccatgac	atgccatcgt	aacagccagc	catctcatgt	gccatctcag	aggggagagc	720
cctaggccac	acctaccaca	tcaccaactc	aatttttctt	ctagctcaaa	gcaagtagga	780
tgaagagctc	atggcacagt	tcccttcctt	ggaggagcgt	cctcagcatt	tgggagtgac	840
acaatgtgga	acgtgctcaa	ctacagcact	aaacctaaaa	gtgcctgacc	ctttctgcat	900
ccctaaaaca	aaactcggct	gggtccatag	ccagccgttc	tcaagaattc	taaacataaa	960
atttggattc	atcacctaga	accgacttaa	tgttggcttt	cccctgcaac	tctgagaaca	1020
ttcgggatgg	atttctttca	ccccttctga	tcctgtgcat	gtaattgatc	aagcgtccac	1080
attctgacat	tccagctctg	aatggatgtt	aatccttgca	ctactgtgaa	aacataaagc	1140
ccatgaatca	atttgtgagg	gtgtggaaaa	gcatccaata	acaaagtgac	tttttctgtg	1200
ttttcagtgt	gagaaagata	tcaagtgtgc	ttggaatttc	tgtagacaat	gtaatcttgt	1260
gttgtaattc	atgcaggcta	tggccactcg	gacgcagatg	ttctgcacca	gtcattactt	1320
gaagccaaca	ttgctactga	ggtttgcctg	acagctctgg	acacgctttc	tctatttaca	1380
ttggcgttta	agaaccagct	cctggccgac	catggacata	atcctctcat	gaaaaaagtt	1440

tttgatgtct acctgtgttt tcttcaaaaa catcagtctg aaacggcttt aaaaaatgtc 1500

ttcactgcct taaggtcctt aatttataag tttccctcaa cattctatga agggagagcg 1560

gacatgtgtg cggctctgtg ttacgagatt ctcaagtgct gtaactccaa gctgagctcc 1620

atcaggacgg aggcctccca gctgctctac ttcctgatga ggaacaactt tgattacact 1680

ggaaagaagt cctttgtccg gacacatttg caagtcatca tatctgtcag ccagctgata 1740

gcagacgttg ttggcattgg gggaaccaga ttccagcagt ccctgtccat catcaacaac 1800

tgtgccaaca gtgaccggct tattaagcac accagcttct cctctgatgt gaaggactta 1860

accaaaagga tacgcacggt gctaatggcc accgcccaga tgaaggagca tgagaacgac 1920

ccagagatgc tggtggacct ccagtacagc ctggccaaat cctatgccag cacgcccgag 1980

ctcaggaaga cgtggctcga cagcatggcc aggatccatg tcaaaaatgg cgatctctca 2040

gaggcagcaa tgtgctatgt ccacgtaaca gccctagtgg cagaatatct cacacggaaa 2100

ggcgtgttta dacaaggatg caccgccttc agggtcatta ccccaaacat cgacgaggag 2160

gcctccatga ttgaagacgt ggggatgcag gatgtccatt tcaacgagga tgtgctgatg 2220

gagctccttg agcagtgcgc agatggactc tggaaagccg agcgctacga gctcatcgcc 2280

gacatctaca aacttatcat ccccatttat gagaagcgga gggattttga gaggctggcc 2340

catctgtatg acacgctgca ccgggcctac agcaaagtga ccgaggtcat gcactcgggc 2400

cgcaggcttc tggggaccta cttccgggta gccttcttcg ggcagcaata ccagtttaca 2460

gacagtgaaa cagatgtgga gggattcttt gaagatgaag atggaaagga gtatatttac 2520

aaggaaccca aactcacacc gctgtcggaa atttctcaga gactccttaa actgtactcg 2580

gataaatttg gttctgaaaa tgtcaaaatg atacaggatt ctggcaaggt caaccctaag 2640

gatctggatt ctaagtatgc atacatccag gtgactcacg tcatcccctt ctttgacgaa 2700

aaagagttgc aagaaaggaa aacagagttt gagagatccc acaacatccg ccgcttcatg 2760

tttgagatgc catttacgca gaccgggaag aggcagggcg gggtggaaga gcagtgcaaa 2820

cggcgcacca tcctgacagc catacactgc ttcccttatg tgaagaagcg catccctgtc 2880

atgtaccagc accacactga cctgaacccc atcgaggtgg ccattgacga gatgagtaag 2940

aaggtggcgg agctccggca gctgtgctcc tcggccgagg tggacatgat caaactgcag 3000

ctcaaactcc agggcagcgt gagtgttcag gtcaatgctg gcccactagc atatgcgcga 3060

gctttcttag atgatacaaa cacaaagcga tatcctgaca ataaagtgaa gctgcttaag 3120

gaagttttca ggcaatttgt ggaagcttgc ggtcaagcct tagcggtaaa cgaacgtctg 3180

```
attaaagaag accagctcga gtatcaggaa gaaatgaaag ccaactacag ggaaatggcg   3240

aaggagcttt ctgaaatcat gcatgagcag atctgccccc tggaggagaa gacgagcgtc   3300

ttaccgaatt cccttcacat cttcaacgcc atcagtggga ctccaacaag cacaatggtt   3360

cacgggatga ccagctcgtc ttcggtcgtg tgattacatc tcatggcccg tgtgtgggga   3420

cttgctttgt catttgcaaa ctcaggatgc tttccaaagc caatcactgg ggagaccgag   3480

cacagggagg accaagggga aggggagaga aaggaaataa agaacaacgt tatttcttaa   3540

cagactttct ataggagttg taagaaggtg cacatatttt tttaaatctc actggcaata   3600

ttcaaagttt tcattgtgtc ttaacaaagg tgtggtagac actcttgagc tggacttaga   3660

ttttattctt ccttgcagag tagtgttaga atagatggcc tacagaaaaa aaaggttctg   3720

ggatctacat ggcagggagg gctgcactga cattgatgcc tgggggacct tttgcctcga   3780

ggctgagctg gaaaatcttg aaaatatttt tttttcctgt ggcacattca ggttgaatac   3840

aagaactatt tttgtgacta gtttttgatg acctaaggga actgaccatt gtaatttttg   3900

taccagtgaa ccaggagatt tagtgctttt atattcattt ccttgcattt aagaaaatat   3960

gaaagcttaa ggaattatgt gagcttaaaa ctagtcaagc agtttagaac caaaggccta   4020

tattaataac cgcaactatg ctgaaaagta caaagtagta cagtatattg ttatgtacat   4080

atcattgtta atacagtcct ggcattctgt acatatatgt attacatttc tacatttta    4140

atactcacat gggcttatgc attaagttta attgtgataa atttgtgctg ttccagtata   4200

tgcaatacac tttaatgttt tattcttgta cataaaaatg tgcaatatgg agatgtatac   4260

agtctttact atattaggtt tgtaaacagt tttaagaatt tcatcctttt gccaaaatgg   4320

tggagtatgt aattggtaaa tcataaatcc tgtggtgaat ggtggtgtac tttaaagctg   4380

tcaccatgtt atattttctt ttaagacttt aatttagtaa ttttatattt gggaaaataa   4440

aggttttta ttttatttaa ctggaatcac tgccctgctg taattaaaca ttctgtacca    4500

catctgtatt aaaaagacat tgttgacc                                      4528
```

<210> 590

<211> 4563

<212> DNA

<213> Homo sapiens

<400> 590

atcacagagg cccagggcat gtggaaaggg ggaaagtctg ggaataaagt gaggtgctgc　　60

cccgtaccag ctagcatggg gcctggcaca aagccgtctc agcaatccga ctccctcggt　120

ggtacggcaa gaggaactct ggagacagct tcctcctgct atacctcctg cgggagttga　180

attgctggga tggctttgtg ccaggctagg tccttgaata agtcacctca tctctctggg　240

cctgtttcct catgtgtaca atgggtggct aaacgagag gcttttccag ctctgctgca　300

ttcagattgt ccgacttggt agctgaggcc tagagagggt gtgtcagttg cccaaggccc　360

cacggcaggc aggtcagggg caagctcaca aaagtgagta ctttgcaaca gtggttcccc　420

agcctggctg tgcttcagaa tcaccggcag agcttttaaa aatatgctgt tttaaaaaca　480

gattccaagt ccaaccacag gctattgaat cagaattgct ggggaagttt ctagtttaag　540

aaactttca gatgatacag atactcagag ttgagaacta ttgtcttcca ctcaccatat　600

tactcctcag tggggaggtt agtgatgtgt ttgtgtgtgt gtgtgtgtgt gtgtgtgtgt　660

gtgtgatagg agggtgggca gcagcttaat gctagccccc aggccataag gtcattgcct　720

tccatacccc cttcacagga acatttgttg gagctcccag cctgctactt aggggcacac　780

agtatttcta tgatgagatg gcggcatgtg gtgggagggt gtccatggct gattctcagt　840

cataccaatc agatactgac ttccttccat accagttggt aaatggctgc tgccctgagc　900

agtccacatg ctctcccctg ccccagccct tcctgtggga gtctcctgga tcctactcca　960

ttatatagca actaaagggg cagtgcgtgg tattggaggt ggcccctggg ccctgctcct　1020

gcagctgtgt ccagagccat tctggcaagt ccatgtctat gcagtgcttg tgtcaacctg　1080

tggactcagc ttggcttcag tgtcagatga gaactccctg tgggggcagc cattatcttt　1140

cccatttcag caaacattta tccatgctta ccctgtgctg ggccctgggg acacaaatac　1200

tagtcagacc agctgtgcct gggctctggg ataaggctgc acgcactgcc tacaggcctg　1260

agagcagagc acaggaagct ccctgcccag cccagctacc taggagaaag gagggtggga　1320

aggtgactat ctccctgaga ctgggagagg ggacagctgc ccagctgtcc tgtggtacgg　1380

cgctgaggaa tgccacctag gagttgggag ggggcatggc cgtttctgtt ccagcctcac　1440

ccctgtctct cttggcagat gcagtccacc tatgtcctgc agggtcttca cctccacatc　1500

ccaaacattt tcccagccaa cccggccaac atctctgtgg ccctgagagc ccagggcagc　1560

agctacacgg tgagagataa agcatgtgtt cggcacccag ttcagccagg tagcggcttc　1620

ctctgagaag aggaggaaat gaaactgcct tcacactccc ctttcctgcc tgcaaggcaa 1680

cctcaggata caggaaaagc acctggaggg tgggaggact tgtgtcacag cgcagggatc 1740

ctgccaagat gctcaactgc ttgaaggaat tcaggccagc tgcacacccc catgctgctg 1800

ctctgaagca ggtctcgctg cctaatttgc accctcagat caagcatact taggtccctt 1860

ttcaactctt ccttgtcccc tctttctctg ggacccttag atacctagat ctctgccttt 1920

cccagaactt tctaaaccag ttccttggca tttcagactc atgaaatgaa tgatctgcag 1980

agctggcaga tatatgagaa atttgccatt gtagtccatt tccttgccca tggcagacat 2040

cactagtcaa tcatgacttt ttttatgctg agcccataaa tgttccataa tcagccacta 2100

ccaattgata aaagttagaa tacaagagga acctatttgc catctctaca taatcccact 2160

ccctggttac acagctgagg agcatgaact ccagagaggg aaaggagctg accccaggg 2220

tcacccaggg ccagtctaga gtccaggtct cctgactgca gccaggctcc ttgcactctg 2280

ctagcctgcc tctcctgact tcctcctgcc cagatcccgg aagcctggct cctcctggcc 2340

aatgttgtgg tggtgctgat tctggtccct ctgaaggacc gcttgatcga cccttactg 2400

ctgcggtgca agctgcttcc ctctgctctg cagaagatgg cgctggggat gttctttggt 2460

tttacctccg tcattgtggc aggtgtgcag aggggtgtgg ggcaggggc tgaactttgg 2520

gcttggggaa gtctgcttcc accatgggct gatgctgaag tggtagcctg gaccaagttc 2580

agcctctccc agtgggcgtc agtgttggct cccagaggt gcaagctgaa agagaccctc 2640

ctatctaatc cagctgcccc tcattttgac agaagaagaa actcaggccg agagaggaac 2700

aaatattttc ccccagtgaa ttatcagctc cttgaaggca gagatagttt ttcttttttt 2760

attcactgct atgaacatgc acgtgggccc tccataaatg tgttgaatga attttccact 2820

tagtggcaaa tgaagactta aaaaaaaatt atcttccttc ttccatttca aaaggatctg 2880

aagccatttg ttacaaagtg ggggttggtg ggggcagtgg gggggatcag ctaaagaagt 2940

ctttcacact gttgcacaaa cctgaaccct ttttacttag taactttatg accctgaagt 3000

tccttagagt ctctgagcta tgtctttaaa atggggacag gtgtcattcg gaccctgagc 3060

agggctctgc ccttgtggaa ctcagtctga tggggggtgt tgtgaggatt acagcagatg 3120

aagtctgtaa agcactcagt agtgtgcctg gatcacaagt atgtgctgga gaaatgaaag 3180

ctccataaac ggtattgtgt tgaaagtgtg aaaacccaac tagatttat tccagctata 3240

tccttaaagc agtttgtcct attttatcct cacaataatc ctgggaatgt tattcctgct 3300

tcttgagtaa gggaactgag tctagagagg ttaagtgatt tgcccaaggt cacacagcta 3360

```
gccaggctgg gaacccaggt cccccaactc catgtccaat gttcattcca ctagagcaca   3420
gctatctccc aagcaacaca ggagaaggag ataacatagt taaacttgaa agccaggtta   3480
gaaacactac agcaatactt gacgttgcag tagagaagtc atgtgatatc atggaaagta   3540
ggccagcttt gaaaccagac ataccagagc tcaaatccag ccctgactac ttatcagctg   3600
tgtgactgtg ggctagttgc ttaactttct agttaagcac ttgaaagtgc tagttatttc   3660
actttcttcc gcagcaagga tgcatggtaa atgcctagca cataacaggt tctccattaa   3720
tgagagttgt tagtgttatt gagtgcaaaa ctcagcttgg agcttctagc agccaagacc   3780
aaaagggagg agttggtcac atcttggccc cctcctccac cccccagtcc agcattcttt   3840
tccttgcctg ctgctcaatc tttggctgct tcatgagtac cccatcccca ccatgtacaa   3900
gctcttctgt gggctaagct gcctggggtg ggcctgacta taatccccct ctgctcctcc   3960
accaggagtc ctggagatgg agcgcttaca ctacatccac cacaacgaga ccgtgtccca   4020
gcagattggg gaggtcctgt acaacgcggc accactgtcc atctggtggc agatccctca   4080
gtacctgctc attgggatca gtgagatctt tgccagcatc ccaggcctgg agtttgccta   4140
ctcagaggcc ccgcgctcca tgcagggcgc catcatgggc atcttcttct gcctgtcggg   4200
ggtgggctca ctgttgggct ccagcctagt ggcactgctg tccttgcccg ggggctggct   4260
gcactgcccc aaggactttg ggaacatcaa caattgccgg atggacctct acttcttcct   4320
gctggctggc attcaggccg tcacggctct cctatttgtc tggatcgctg gacgctatga   4380
gagggcgtcc cagggcccag cctcccacag ccgtttcagc agggacaggg gctgaacagg   4440
ccctattcca gcccccttgc ttcactctac cggacagacg gcagcagtcc cagctctggt   4500
ttccttctcg gtttattctg ttagaatgaa atggttccca taaataaggg gcatgagccc   4560
ttc                                                                  4563
```

<210> 591

<211> 3554

<212> DNA

<213> Homo sapiens

<400> 591

```
tcgcgggttg gggcggttgg gctggcagct gaggctcgtg gccatggagt ggggttctga    60

gtcggctgct gtgaggcggc accgcgtcgg agtagagcgt cgagagggag cggcggccgc   120

gccaccgccg gagagggagg cccgagcgca ggagcctctg gtggatgggt gcagcggcgg   180

cgggaggacg cggaagagga gccccggggg tagcggcggc gcgagcaggg gcgcggggac   240

cgggctgtct gaggtgcgcg ccgcgctggg gctcgcgctc tacctgatcg cgctgcggac   300

gctggtgcag ctctcgctgc agcagctcgt gctacgcggg gcggctggac accgcgggga   360

gttcgacgcg ctccaagcca gggattatct tgaacacata acctccattg gccccaggac   420

tacaggaagt ccagaaaatg aaattctgac cgtgcactac cttttggaac agattaaact   480

gattgaagtg caaagcaaca gccttcataa gatttcagta gatgtacaac ggcccacagg   540

ctcttttagc attgatttct tgggaggttt tacaagctat tatgacaaca tcaccaatgt   600

tgtggtaaag ctggaaccca gagatggagc ccagcatgct gtcttggcta attgtcattt   660

tgactcagta gcaaactcac caggtgccag tgatgatgca gttagctgct cagtgatgct   720

ggaagtcctt cgcgtcttgt caacatcttc agaagccttg catcatgctg tcatatttct   780

ctttaatggt gctgaggaaa atgtcttgca agccagtcat ggtttcatta ctcagcaccc   840

ctgggctagc ttgattcgtg cattcattaa cctagaggca gcaggtgtag gagggaaaga   900

acttgtattc caaacaggtc ctgaaaatcc ttggttggtt caagcttatg tttcagcagc   960

taaacaccct tttgcttctg tggtggctca ggaggttttt cagagtggaa tcattccttc  1020

agatactgac tttcgtatct acagggattt tgggaacatt ccaggaatag acttagcttt  1080

tattgagaat ggatacattt atcacaccaa gtatgacaca gcggacagaa ttctaacaga  1140

ttccattcag agagcaggtg acaacatttt agcagttctt aagcatctag ctacatctga  1200

tatgctggct gctgcttcta agtatcgaca tggaaacatg gtcttctttg atgtgctggg  1260

cctgtttgtc attgcctacc cctctcgtat tggctcaatc ataaactaca tggtggtaat  1320

gggtgttgtt ttgtacctgg gcaaaaaatt tttgcagccc aaacataaga ctggtaacta  1380

caagaaggac ttcttgtgtg gacttggcat cactttgatc agctggttca ctagccttgt  1440

taccgttctc attatagcag tgttcatctc tcttattgga cagtctctct catggtataa  1500

ccacttctat gtctccgttt gtctgtatgg aactgcaact gtagccaaaa taatacttat  1560

acatactctt gcgaaaagat tttattacat gaatgccagt gcccagtatc tgggagaagt  1620

attttttgac atttcgctgt ttgtccattg ctgtttttctt gttaccctca cttaccaagg  1680

actttgctcg gcgtttatta gtgctgtctg ggtagcattc ccattgctca caaagctctg  1740
```

tgtgcataag gacttcaagc agcatggtgc ccaaggaaaa tttattgctt tttacctttt 1800

ggggatgttt attccttatc tttatgcatt gtacctcatc tgggcagtat ttgagatgtt 1860

taccectatc ctcgggagaa gtggttctga aatcccacct gatgttgtgc tggcatccat 1920

tttggctggc tgtacaatga ttctctcgtc ctattttatt aacttcatct accttgccaa 1980

gagcacaaaa aaaaccatgc taactttaac tttggtatgt gcaattacat tcctccttgt 2040

ttgcagtgga acattttttc catatagctc caatcctgct aatccgaagc caaagagagt 2100

gtttcttcag catatgacta gaacattcca tgacttggaa ggaaatgcag ttaaacggga 2160

ctctggaata tggatcaatg ggtttgatta tactggaatt tctcacataa cccctcacat 2220

tcctgagatc aatgatagta tccgagctca ctgtgaggag aatgcacctc tttgtggttt 2280

tccttggtat cttccagtgc actttctgat caggaaaaac tggtatcttc ctgccccaga 2340

agtttctcca agaaatcctc ctcatttccg actcatatcc aaagaacaga caccttggga 2400

ttctataaaa ttgacttttg aagcaacagg accaagccat atgtccttct atgttcgagc 2460

ccacaaaggg tcaacacttt ctcagtggtc tcttggcaat ggcaccccag tcacaagtaa 2520

aggaggagac tactttgtct tttactccca tggactccag gcctctgcat ggcagttctg 2580

gatagaagtg caggtttcag aagaacatcc tgaaggaatg gtcaccgtgg ccattgctgc 2640

ccactatctg tctggggaag acaagagatc ccctcaactg gatgctctga aggaaaagtt 2700

cccagattgg acatttccct ctgcctgggt gtgcacctac gatctctttg tattttaatc 2760

ttgtggatga gctctaagta catgcccagt ggatactcca tgtgacatgg tttctcccta 2820

tgttacgtgg atgtttgtaa cagggaccag atggcatact tagtgttttc tgtaaactga 2880

atttactggc aggaacattt tcagctgact gggataaact gatgcttcga ttcctgaaga 2940

actcaaatcc accacttgaa ctgggttcct aggattacac accatatgca gtaccattag 3000

agaaagatgc tacgtgggtg tatggcctag aggagatgtg taactttgc aactaacctg 3060

agctgtgggt gtggatggag gtgtctcaga ttctccagag ccaatggctt taagaaatcg 3120

aatcatgtgt cgacaaaggt cccacttgcc ttgttctagt gctgtgttga atagaagggt 3180

agcatgttgc ctacttactg cagggacttc catattctac aaaaaacaac caggacagca 3240

ttctttttat actacacaat ttgggaagat atgagcaatt ctttatctcg ttttctaaac 3300

tcaaagaatg tagccacacc accacagggg ttagtttaat aataagatta aaaagtacca 3360

tacaaggaaa agcgaggcaa gtactcttct ggtgtatgta aactataatt tattaaactc 3420

ctactacatg ccagatagca tacatatact ttaagtcatt tcatttattt ctcccagtga 3480

ctctgcagat aggcatatca tttgtatttt acaagtgagg aaactgagtt aagtaaattg   3540

ttgaagatca gcag   3554

<210> 592

<211> 3833

<212> DNA

<213> Homo sapiens

<400> 592

ttgtagcctc tactgtacaa ttccagcagg gaaggagctc aacactgaat tctaaagcta   60

tgcacttgtc tgttttcttc ctccttgacc ttttcatagc aggggtgaac aactggatgc   120

tgaggaggaa aaaactgggc aaattaaagg ggaatgagct tcagacccca tgcagagctg   180

gctgtgagtc cgggtttcac tgctcaccag ctgcatgacc ttgagcatgt gacttcccca   240

ctctgagctg cggtggcctc agtgcaacac ctgggtggcg gttaaaaacc tcgtgatcca   300

caaatgaagg cccttgttat tagttggcaa aaaattaagg aaaaacaaag aacaccatgg   360

ccttgaagag tgttgggcag gagactgctc ctcctccgga ggaaagtgaa dacaggaggc   420

tgtcacatcg tctctgacat ggagagtggc ttccgggcca tccgtagggg aaggacacag   480

agctcttgag ccccccttcta gattcaaggt tggcgtttta cggggatgga ggaggtagcc   540

accaaaaggg aatgatttgc aggccaccag aaatgtgcct gaggtcccac ctgtggaccc   600

tccattttttg gatcctgttc cctttcaatg ccagtactct tttctttttt cttttttttct   660

ttctttcttt tttttttttt agacggagtt ttcttcttgt tgcccaggct acagtgcagt   720

ggcatgatct cagctcactg caactgattc aagcgattct cctgtctcag cctcctgagt   780

ggctgggatt acaggcaccc gccaccatgc ccagctaatt ttttgtattt ttagtgaaaa   840

cggggtttca ccatgttggt cagtctgagc tcgaactccg gacctcaggt gatccaccca   900

tctcagcctc ccaaagtgct gggattacag atgtgagcca ccgaacctgg cccagaactc   960

ttagaagtag aatctcaggg ttgaaagagt ttttaggatt ttcgacagtt atggtagagt   1020

attattggtc actataagat gttagtggga atggaactac tggctgtttt ccaactgact   1080

gttccgtcag ggtgggggaga ggtctcagca cgaggccccg ccgaaatgtt ggtaagtggt   1140

```
cagccaagtg ggccgctcac tcccggttca cccactgtgt ttctgtcagt gaagcaaaca   1200

tccccatttg gcaggagaag aagctgccgg aggtcacact gctagtgatt ggtggcccag   1260

gggtagggca gccttctttc ctctgcagtt cactgctcca gaaccatctc cagcctcata   1320

gctcaccgtg gacagccctg cggtgtggcg ctgatgtaca gagtgatgcc aggcgttcat   1380

ctccccactg agctcctgct gagtgtttgc ctggggccag gtcctccttc cgggaagtca   1440

ttttagctgg aaagaacagg gtggggggcgg gtggcaaggg atcagagcat gagcgtttga   1500

gggcttcgtc aggggcagtg aggagcctct aaaggactct acatttagga atgacagagt   1560

caaacaattt aacaaagccc taaaggtccc tgccaggaaa gaatgagccc catgtatcac   1620

cataagcaac ttcttagaaa cataacccac ccctgtcatc ccagcacttt gggaggccag   1680

ggagggagga ttgcttgaag ccaggagctc gagatcaacc tggtcaacat agtgagaccc   1740

catctctaca aaaataaaaa taaattagcc gggcatggtg gcacatgcct ggggtcccag   1800

ctactcagga ggctgaggca ggaggatcac ataagccagg gagactgagg ctgcagtgag   1860

ctgtgatggc atcactgcac tccagcctgg gcaacagagt gagaccttgt ctctaaaaaa   1920

agaataataa attttaaaaa acaaaatata acccacctta taattgattc aggcctcttc   1980

ccctcctgtc acgttgccag gatcccagga tgctggtatc ctgcatagat ttcaggtaca   2040

tcactgatgt cctgactgag gaggatgccc taggtgagtt tggaagcttt ctgggatata   2100

cgacgtgcac acacagtagt ggcatgcttt gtttcctaaa agagtgagtg atgcttttta   2160

tttcttccag aaatactgca gaaaggtcaa attggtaaaa aagaaagagg tgggttgtaa   2220

gaaaattttc ttcattgttt ttgctaacat tgtccacttt tgagtgcccc tgtccttttg   2280

gggtacacat tgtcttccca aatgccctgt gctgagcagc taggccctca aatcaacatt   2340

caagtctgca tggtgaagcc tgctgggtat gacctctgac tgcagagttt gcttcagcca   2400

ctgctgaaag gaagtttggc tttaggatta cactgtaggg agagccctgg gggagcaggg   2460

cagtccgtga gagtatcctg atcacctggg tttgacatcc tagtaatttg tggctgggtg   2520

tgtgtgtgca gggccggatc aggagaacag ctggactctc caggggaaac agcttagcta   2580

caggcacttc caattccgaa gggccctgga aagtgcaaaa tgttgacggc gctgtgtttt   2640

cacagagaag caaatgctgg cacaaggata ccctgcttac acgacatcgt gcgcctggct   2700

ggggtactca gatgacacgt tgaagcagct ctgtgcccag gcgctgaagg atggctggac   2760

caggtttaaa gtaaaggtgg gtgctgatct ccaggatgac atgcgaagat gccaaatcat   2820

ccgagacatg attggaccgg aaaagacttt gatgatggat gccaaccagc gctgggatgt   2880
```

gcctgaggcg gtggagtgga tgtccaagct ggccaagttc aagccattgt ggattgagga 2940

gccaacctcc cctgatgaca ttctggggca cgccaccatt tccaaggcac tggtcccatt 3000

aggaattggc attgccacag gagaacagtg ccacaataga gtgatattta agcaactcct 3060

acaggcgaag gccctgcagt tcctccagat tgacagttgc agactgggca gtgtcaatga 3120

gaacctctca gtattgctga tggccaaaaa gtttgaaatt cctgtttgcc cccatgctgg 3180

tggagttggc ctctgtgaac tggtgcagca cctgattata tttgactaca tatcagtttc 3240

tgcaagcctt gaaaataggg tgtgtgagta tgttgaccac ctgcatgagc atttcaagta 3300

tcccgtgatg atccagcggg cttcctacat gcctcccaag gatcccggct actcaacaga 3360

aatgaaggag gaatctgtaa agaaacacca gtatccagat ggtgaagttt ggaagaaact 3420

ccttcctgct caagaaaatt aagtgctcag ccccaacaac ttttttcttt ctgaagtgaa 3480

agggcttaaa atttcttgga aatagtttta caaaaatgga tttaaaaaat cctaccgatc 3540

aagatgagtt cagctagaag tcataccacc ctcaggaatc agctaaagca aaaagaactt 3600

ttacctcggc atccagccca acccctaaag actgacaata tccttcgagc tcctttgaaa 3660

gcaccctaaa cagccatttc cattttaata gttggatgcg gattgtaccc ttcaatctga 3720

aagtcttcag ctttgaagtc atcaattttc tcaacttttc gaagaatcct gagctttggg 3780

aaaggtctgg gttctcgctg aagctaaaaa caaaataagg ccattatttt gcc 3833

<210> 593

<211> 3858

<212> DNA

<213> Homo sapiens

<400> 593

tttctgcacc tcagccttct gagtaactat attactctat aagcacacat caccacaccc 60

agctaatttt taaatttttt atagagacag agtctcactg tgttgctcag gctggtctct 120

aactcctggc ctcaagtgat cctccagctc tggcctccca aaagtgctgg gattacaggc 180

atgagttctt tgtatgagtt ccttgtatat tttggatatt aaccccttgt tagataaaag 240

gtttttcagt attttctccc attccgtgga ctgccttttc attttgttgt ttcctttgct 300

gtgcagaagc tttttttgttt ggtttagttc catttgctta tttttgcttt tgttgcctgt 360

gctttttggtg tcatttacaa aacaaacaaa cagaattatt gccaagacta atgtcatgga 420

gcttttccac tgttttcttc tagttttaca gtttcatgtc ttacacttaa gtcttttcac 480

ttttttttttt tttgggacag agtctccctc tgttgcccag gctggggtgc agtggtgtat 540

gatcttgact cactgcaacc tccacctcct gggttcaagt gattctcctg cctcggcctc 600

ccgagtaggt gggattatag gcatgtgcca ctgtgcccgg tttatttttg tattttttaat 660

agaaatgggg tttcaccagg ctggtcttga actcctgacc tcaagtgatc cacccgcctc 720

agcctctcaa gggactagga ttacaggcaa gagccactgc gcctggcctc ttttaaccat 780

tttgaattga cttttgtgga tggggtaaga taagggtcca atttcatttc ttggcatgtg 840

gttatctagc tttttcaaca ccatttatta aagagactat cctttctttta ttgtgtactt 900

ttgacacctt tgttgatgat tagttggcca cataaacgag gatttatttc tgggattcct 960

attctgttcc attggtctat atgtctcctt ttatgccagt accatacagt tttgattact 1020

gtaggtctgt aatataactt gaaatgaagt gtgatgccac cagctttgtt cttcttgctc 1080

aggatcattt tagatattct gggtcttttg ggttctgtat ggatgttagg aattttttttt 1140

ttttttttctg tgaaaaatgt cattggagtt ttgctagaga ttgcgttgaa tctgtagact 1200

actttgtgta ttgcagacat tttgacaata atgattcttc tgatcctgaa catgggatag 1260

ctttccattt atttgtgtca tctccagttc tttcatatat gtattatagc ttttagcata 1320

cacatctttc ccctccttgg taaaacttat cctaagtat tttattcctt ttgatgctat 1380

tgtaaatggg attgctttct taatttctttt cttggatact tcactgttag tgaagtgtaa 1440

ttgattttttg tatgttgatt ttgtatcctg aaactttact ggattcgttt attcattcta 1500

acagttttta gtggcgtatt tagggttttc tgtatatagg atgatgtcac ctgcagagac 1560

aattttactt cttcctttct gatttggatg cctttttattt cttttccttg cctaatttct 1620

gtggctagga tttctagtac tatgttgaat gtaagtgata agtgtgggca tccttgtctg 1680

tccttgtcac attcagttgt atgtgcaata ctggaaccat ccagctcata gtcacgtaat 1740

tcctctttgt gcagcctcat gtaaaatcac acccctattc acatttttttt ctgtctgtct 1800

cccacctctc caggtccctg ccctgcaact ttcagttact tcagactctc agaagactag 1860

cctctaaata cctcaatttta tctgcactac tgtggtctac ttgaaattct cttccctctt 1920

ctgcagtttg taatggcatt caggccaaaa actgtagtag ttttagggct ctcttcattt 1980

gcttctctgc tcctagggat catagtgctg tgctatctgt tgtccagcat ctgacacagt 2040

tggttttata ttttgtctgg ttttctagtt attaagcagg ttaagtctgg ttcctgctgt 2100

tctatatagc aggaagcaaa ggttctctca tgaattttta gcataataac ataagcgtgg 2160

attccaaaaa ttcattacac agatcctgga aatctgttta ctatgtttta tacattctgt 2220

gaaagctgga gaatatatat ttgtttttact atgtgtatcg caaataaaat atcaatttca 2280

tgtgccagag aattgaatac attatcaaag ggtcatttca taacgttata atcaccatcc 2340

atcctgtaag tcctttgaaa tttcttcttt tctatggatc taacattgat caatgacgaa 2400

ttcctaagca tctatattag ttagcccagt gtttctcaaa gtccaccgca tgtaaaaatc 2460

atctagggaa tctttctaaa atgtggattc tgatttagta ggtctggggt gaggtcttcc 2520

cttttgcaat tccagcaagt tcccatggga tgctggtact ggttaatgga agtcacttag 2580

agtagcaagg agcctgtttg cctagtattt acaatgagca cgttttgggt atcatcaaaa 2640

caagagaatc taaaaatgta tggtgtgggt ggaaggttgt gttacttgat atttcaaaaa 2700

gatcattgaa atcagaaaat ctcagagata tgttggattt catcacattt attctatggc 2760

ttaatgttgt tttatttttga atatataata agagagatac cacaaatctt tagctattaa 2820

tatttaggga tgttaatgtc cttaattcat attgtctcaa atgtgattca ttccctctat 2880

aggtatacta aaacaggcat tcatgcctac aaaaccatct tcctaacttt ctttcctctt 2940

tttagtctct tcctgaacca gtgacagtgg ttctcaaaca ttttggtctg aggacccctt 3000

tatggcctta aaaatgatcg aagagctttt atttatgaag gtaatacctg ctaatacttg 3060

ttgtaatcta ttaacattga gaaatgtaaa aattttttatt aattcactta aaatatcaat 3120

aaacccatta tttgctaata taaattgcac tttttaatga aaaataactt tagtttctac 3180

tgtgtgcttc tgcattttga aaatatgtct aggatacggt atgtatttag gagatСtt 3240

ctaaataaat gcatattcat tttttaaaat gggacaaatg tagcatagac atatttttgc 3300

taacaatatc catatagttg caaatttcac ttttagaatt tgctttcaaa aacaggttgt 3360

ttattcttct ttgttatgcc ttagttagta aatcatatat tataaaactt cttcaatgca 3420

attggtcttt ggtcagccat tgacatagga agagttagaa agagtccagg gctccttggt 3480

actggctgtg actggataag taggttgtgg cttagtttgt gtttaggtgt cataactagg 3540

ctaggtttgg gtcccagaaa gtgctagcct tactgtagga gaggaagtgg tattgctggg 3600

tgtgtcctca ggtcaggaag tgggacgagt gcagtatgga agcccagggg ggtccttgtg 3660

actggaggaa aggtgaggtt tccagtaaag gattcagaat tcgggcatgg tgcagcatgc 3720

ctatagcccc agctactcgg ggggctgagg tgggaggatc gcttgggacc aggagttcaa 3780

ggttgcagtg agctgtcatt gcgccactgc accccagcct gggtgacgga gtgagacctg   3840

tctcaaaaat aaatacat   3858

<210> 594

<211> 3642

<212> DNA

<213> Homo sapiens

<400> 594

cctcagaggg ggctgggtgg tcccagggcg cgaccttggg ctgccagaag ccacgctagg   60

gttggtcaag gctctcagtg caaggtttcg acatagtcgt tctgtgctgc gttctgcagt   120

tgtcagctgt cacctgcaaa cctcagcagc tccccttagg gcgtggtggg caaacagtgt   180

cagtgatgcg tgtccacagc ctcgggaaac acttcaggtc cacgttttcg tatgttgtca   240

ctagatctcg gcccttccga ccgaaaggct tcggcacctc acgcggtggg tcccatgctt   300

gtcctgttaa atactcttga actctattct gtcctgatac tgaataatgc aagaatgggt   360

ggttccagtt ttcatcccta taaaccgtac atctttgtgc cagtaagtaa gcatgaaaca   420

aataagtacg tctgcgctaa gcgaacgtaa aacacacgac atcagtcggt tctcggggag   480

cgatggagct agtcacgctg agcggctgtc actctgccat tccggcctct ggggaggtgg   540

aacgattcat agtcccctgt gtggaaaagg ggcttgcctg ggccttgttt ggctttgcta   600

gtcagtaggt aggtacagga gaggtacctt caaatagcct tacatgctgg taagtgcagg   660

gaggctgggg gctgtgtccc ttcttaaccc aagtggcgca gctcctccgt ggagaaccac   720

cattgatttg cctcttctcc gaggctgttc atccctgact gttgagagag gaccctgctg   780

cagcctccct gtggccagta gcacagttct catcccttcc cagtcctctc tccggccatg   840

tcaacagtga gaggtgggtc gtttccatcc cctttggggg gctgcggatt caccccctgtg   900

ggaaatggca cctcatcatg gtaggggctc ttgttccctt tcagctcccg attctcctga   960

aggggacgtc cgatgatgat gtcccgtgtc cgggctacct gtttgaagag attgctagta   1020

tccttccttg atgtcccccgt gtagtggaaa gagcggatgg cagggtccca gagtggtgca   1080

aagggttcct ggggattctg ctgtccctag ggggatgcac ggctcctttta ttattgtaac   1140

```
caggcatggg tggggtctga aggctgcaat actgatgaca caggggaccc tagaagccca   1200

ggtgctcctg atggcagagc ctccagtagg cgcctccagg gagcgtgaac tgagaggccc   1260

catggcctgg tctccctgcg gcctggcgca gccctcatca tctcgccctt ccctaacccg   1320

agcgtgccgc agaaatctcc cacgagtctc cgggcagcag ccagtgcctg ctggagtacc   1380

tcctgagccg cctgcacagc agctccggcc acgggaagct caaggtgctg aagatcctgc   1440

tctatctgtg cagccacggc tcctccttct tcctgctcat cctcaaacgc aactctgcct   1500

tcatccagga agctgcagct tttgcagggc ccccagatcc tctgcacggg aacagcttgt   1560

accagaaggt tcgcgcggcc gcgcaggact gggggagcac cctgttctcg gacaccgtgt   1620

tgccgctggc tccctcccag cctctgggga ccccgcctgc cacaggcatg ggctcccagg   1680

ccaggccgca cagcaccctc cagggtttcg gctacagcaa ggaacacggc cgcacgggct   1740

cggcaggcga agccttcctc tccaccatcc agaaggccgc agaggtggtg ccagcgcca   1800

tgcgccccgg gcccgagagt cccagtaccc ggaggctcct gccgcggggt gacacctacc   1860

agcctgccat gatgccttca gccagccacg gtcccccaac cctggggaac ctactccccg   1920

gggccattcc aggtccccga gctgtgaggc atcagcctgg gcaggccgga gggggctggg   1980

atgagctgga cagcggcccc agctctcaga attcctccca gaacagtgac ctgagcaggg   2040

tctcggactc gggcagtcat tccggcagcg acagccattc aggggccagc cgggagccgg   2100

gtgacctggc agaaagggtc gaggtggtgg ccctgagtga ctgtcagcag gagttgagct   2160

tggtgaggac tgtgactcgg ggaccacgcg ccttcctgag ccgcgaggag gcacagcact   2220

tcatcaaagc gtgtggactg ctcaactgtg aggccgtgct gcagctgctg acctgccacc   2280

tgcgtgggac cagtgaatgc acgcagctga gggcgctgtg tgccatcgcc tccctgggga   2340

gcagcgacct cctcccccag gagcacatcc tcctccgcac ccggccgtgg ctgcaggagc   2400

tcagcatggg cagcccggga cctgtgacca acaaggccac caagatcctg aggcactttg   2460

aggcctcctg tgggcagctg tccctgcccc ggggcacctc agctgagcct ggccccacag   2520

ccgccctccc aggcccatct gacctgctga ccgacgctgt gcctctccct gggagccagg   2580

tcttcctgca gcctctgagt tcaaccccgg tctcgtcccg gagccctgct ccctcatctg   2640

ggatgccgtc cagccctgtg cccaccccac ccccagatgc ctcccccatt ccagcccccg   2700

gagaccccag cgaggccgag gccagactgg cagaaagcag gcggtggaga cctgaacgga   2760

tcccaggggg cacggacagc ccaaagagag gccccagcag ctgtgcgtgg agccgcgact   2820

ccttgtttgc tggcatggag ctggtggcct gtccccgcct ggtggggggct ggggctgctg   2880
```

```
cgggagagtc ctgtcctgat gctccccgcg cccccccaaac atcgtcccag aggacagcag   2940
ccaaagagcc tcctggctca gagccgtcag ctttcgcgtt cctgaacgcc tgacccgatg   3000
gcctggccct ggagtcttca gcttcagctg ctgtctgggg cggtctgtgc ttcctgagca   3060
gcctcaaccg tagctgctac agtctccagg cagcttgact tgagaggacg accctagggc   3120
tacctcagtt tcccccatct cctctgccag aggctctggc tatttggact tgaatcccta   3180
cgagggatgg caggtggcag ggcttcagaa atgtcgatct cagggctctc aggggggcagt   3240
ccctgcctgt cttgccctca gacatgaggt ttcttgtatg aatgcggaag cgactaccag   3300
gttccttatt tcattttgat ctcagctccc tccttcccca ggaggtcatg agcagcaaca   3360
agccactgct ccccgtccc atcggggtgg gctaggtgct gaggctgggt ttggtgcatg   3420
tgggttgagg gtgtcttgtc cgggctgcct tgtgctgtct ggcctgaggc catttcaagt   3480
ctcagatccc tacgtgatcc ttccctggct ctcacctgct cctttaggct gtaattgctt   3540
cctacacacg aagcctctga ttggagcctc tggtccatct cagaaaaacc ttccaagagc   3600
gctggggttt atgctttctg aataaacact actgtttaca tg                      3642
```

<210> 595

<211> 5277

<212> DNA

<213> Homo sapiens

<400> 595

```
aagacccca agctcacagc cattccttgc tagagaaaca aagcagcata ttatgtgatt   60
ttcagaggaa ataaatggaa acatacaacg tcatgtcaga gggacgtggg acacataggt   120
aaactgaggc atggaaagaa agcccgtccc tgtgtgaggt tagagagcca gggcaggatc   180
tttccctgaa cgaaactctt tgcatgcatt cctgcccatc cacctcttcc cttttaaaaa   240
cattttcttc aagaattgaa tggccacata atttcttatt ctaaaataag acagaaagac   300
agtgccattc ccatgctctg gggtaatttc catttaaat acgcaatttc tcctctttta   360
atagaagtca gatttctttt atctgtaatt aaatccagaa tatggtttttt tttaaggtcc   420
tcgtggagtt ttgactttac tgttctgaaa atgaataaga gttctgagcg tcagtttagt   480
```

gaacaactca actcattatc cgctggttgt gaaatacaaa accttggtct gacccgtggg 540

ggccgtgtgg tggtggcagc ccctgccctc cccccgggtc tgatggctcc atctgccccg 600

ccagccactg tctttctggc cgcagcccgt tagcccaggg ccctttcagc actgacctga 660

gacttggctc tgacttggtc agatgaccat gtgaacacag ctgcttctgg aggcccatat 720

tccgcaaacc atgccctgc tcactgcagg attctgcacg ttgcattttg gagtaagtct 780

tcggtagacc ttacaggact cccccatgat cttatgtcct tggttttcat gaagggtgcg 840

aggtaagaaa ctcattgaga aaactcacct gaagctgctg aggaggctcc gccaagtctc 900

tcagccagga cacgcctgag tgcatcttgg ggcccatgac caggagagac gttggtgttc 960

ctggtgaact gcatggttcc tgccaccaga cagtcagagc cactgccatg tcaggcgttt 1020

ctctcgtccc gagtcggcaa tctcactccc agatttgtg ctcacctgct tagcttctct 1080

cacccagaag tatgccagat tacagtcaat taccagatgc gcagcaccat ctttctgcct 1140

ttcttcccct ggattacttg tttctcagcc ttggtcttta ttaagctgag tgtttatgcc 1200

tgcgctgcct gcagcccctt tggaagcagg tgaagcatcc atcatccata aaattggcca 1260

ctctgtgccc catccccagg aggccctggc actcctttcc ccagggacac ccgacagccc 1320

agcagtcatc acagagccac gctgtgactt ggaggagaat ggggttgagc caggagtcag 1380

ttctgttgcg gggagggtga ccctttctct tccctcccct gcaagtagaa aatgtccccc 1440

ccaccagtca gcttctggaa atcactggca cagggggggc tttggtgagt gggagatgac 1500

agaggccctg aggagaagaa aaaggagcat ctggggagga aggagtcctt ggcgtccctc 1560

agacacagtg tgtagatggc tctctttta gcagccagat cccaggaaac agctggacag 1620

gaaaccatgg ggcagtgtcc ggcgtgacca gtgtgtccaa gcaacctcac agcactgggc 1680

tccccaggct ccccggctc ccccatggct gtgaccccag tctctggccc cacagctccc 1740

tcatgcacct cccatgctct cccgggggct gtggctgtcc tgggcatctc gtcttggtcg 1800

tctgggtaac aggtcctgag agacgtcccc aggagaatgc tgtgcatgtc ccgggctctc 1860

cagctgcttc tgagccctgg acttggacac ccagcacatg ttcaggttgc cagagtcaat 1920

gcggttaaac cccaacttgc tcgggatgcc tgtttgttag atgaactatg tggaattcac 1980

cccaggtttc tctgtcctcg tatgtgggaa ggtttgtact tagaggctga gacctcgtcg 2040

cctctagcag caggcacagg cccctgcatg gccacattct gctgagatgg tccctgctgg 2100

tggaattgtg gtatctcact gagcatgtgt gttgtcttgc tgtatgagcc cgtgtctcac 2160

tgtgtgtgtg agtgattgta tgtagtgtgt gtctctcact gagtgtgtct cactttctga 2220

gcacatacat atgtgtgtaa gtgtgtagaa tggtcattag ctaattggta ttaggttttg 2280

tcgtggttgc cttctggaaa ctctgtaggg caccccattc cctgacctgc tgtgtccaga 2340

attggtgggt tcttggtctc actgacttca agaataaagc cacggaccct tgcagtgagt 2400

gttacagttc ttaaaggcgg tgtgtcccga gtttgttcct tctaatgttt ggatgtattc 2460

agattttctt ctttctggtg ggttcgtggt ctcgctggcc tcaggagtga agctgcagac 2520

cttcatggtg agtgttacag ctcataaagg cagtgcagac ccaaagagtg agcagcagca 2580

agatttactg caaagagcag aagaacaaag cttccacaat gtgaaggggg acccaagtgg 2640

gttgccactg ctggctcggg cagcctgctt ttttcccctt atctggcccc acccacatcc 2700

tgctgattgg tctattttac agagagctga ttggtctgtt ttacagagag ctgattggtc 2760

tttttttgaca gggtgctgat tggtgcattt acaatccctg agctagacac tgagtgctga 2820

ttggtgtatt tataaacctt gagctagaca cagagtgctg attggtgtgt ttacaaacca 2880

ttagctagac acaagagtgc tgattggtgt atttacagtc ccttagctag acataaatgt 2940

tctccaagtc cccatcagat tagctaaata cagagcacta aatgttgtat ttacaaacct 3000

tgagctagac acagagtgct gattggtgta tttacaaacc ttagctagac acagagtgct 3060

gattggagta tttacaaccc cttagctaga gataaatgtt ctccaagtcc tcactagact 3120

caggagccca actggcttca cctagtggat cctgcaccag ggccgcaggc ggagctgcct 3180

gccagtcgtg caccgtgagc ccacactcct cagcctttgg gcggtcaatg ggactgggcg 3240

ccgcggagca gggggcggcg cttgtcgggg aggctcaggc cgcacaggag cccatggcga 3300

aggggaggct caggcatggt gggctgcaga tcccgcgccc tgccccatgg ggaggcagct 3360

gaggcccagc aagaatttga gcgcagtgct ggtgggctgg cactgctggg ggaaccggca 3420

caccctccgc agctgctggc ctgggtgcta agcccctcac tgcctggggc cagcagcgct 3480

ggctggcagc tccgagtgtg gggcctgccg agcccacgcc cacccagaac tcgtgctggc 3540

ccgtgagcac cacgcacagc cccagttcct gcctgtgcct ctccctccac acctccccac 3600

aagcagaggg agccggctca ggccttggcc agcccagaga ggggctccca tggtgcagca 3660

gtgagctgaa gggctcctca agcagggcca gagtgggcgc caaggccaag gaggtgctga 3720

gagtgagcga gggctgcaag ggctgccagc acgccatcac ctttcactgc cactgacagt 3780

acctgggaaa ctgcagagcc ccacacacat gtgcactgac tgtaacagca ggaatacagc 3840

cagcacctgc agccctggct ggtgtccaca ggactgagtt tcagtcccat agccttgact 3900

tacctgtgat gttggacacg ttggtctcct ccagccttgt tttctccatc tgtgaactgg 3960

gccaacgctc ctctgctgtg agctgatgcg aagccacctc agataacctc tgtgctcagt 4020

gctctgtgcc atggccgtcg cccgtcgctt tactgaggct attgcagaag tcagcgtggg 4080

ctctgggctt ccgcaccaag gtgcgagatg ctcaccccgt ggaatgaggt tgctctgaca 4140

gcaggaccat ggccgtgctc atgcccagct ccgccttcgt gggacaccac gcatgggcac 4200

tccctctggt tggggaaaaa ctgtcatact ggattgtgtt cctttttgc cttaaattat 4260

tagctgccat ttttgctcat caaaaaagtg gcattaggca cttccacatg gatcgaaggg 4320

ccctgtcact agtgggttcc tgctcagagc gtcttgtgtg atgtttcatc ttgatgcttt 4380

gacaggttaa caaccttctc atcaggatca ttgttaggtc cttcaggtgt ggtcctgggg 4440

accggtgatg aaggacaccc ccattgcatc tcagctacgg ctcttggacc atgggcagcg 4500

gtgctgaaat gacaatcctg gagccacagc cttcctccgt ccacagccag tgtgctcacg 4560

gacgacacaa gtaattgtgg acaccacttt gccaccacga ctgtttatgc tgcagcccca 4620

ggggccacag cagcagctgg tctctcctca atgatggttc agcgccgagt gcattggcgg 4680

cacggtccat ttctctgccg agcgcttgtg ttgtgcctgg ggtctgagcc acagcggcag 4740

gtggatggga gagattccct cggaacaggt gtctggagca ggtgggttgc ggggccactg 4800

tcaagcacgt ggggactgtg cctgtggctt catccctgcg tggactcagt cctccccttg 4860

ttttaagtgg tccctgggtc ctttgtgcac atcagtaatt gcagaggcgg gacgcgcact 4920

ctctgagcgg agcagcttgg ctgggcttgt ccctttaatt tgcgatgcat cacaacaaat 4980

gattgtaatc agtcaccgcc cgacggcggc ctgctcttcc atgaccaccc ttcagtgagc 5040

cggcagctga gcgacacgga caaagccgcc tggctcaggg ttggggaaaa cgctctttag 5100

tcagtagagt taaaccacct gatttattcc atattgtgga aggtcagtct gatttaagga 5160

aatgtcagtt tgatagaatg ttttgaaaga aatgcagctc ataaatactg cgctgaaagc 5220

tcagccttga tacaagctca cttggtaaaa taacttaata aaggaaactt tcgattc 5277

<210> 596

<211> 4204

<212> DNA

<213> Homo sapiens

<400> 596

```
agaggaagag gccggctcat gaggtcatca ctagcaaaaa tgtctgtgtt ctgtgatgtc    60

atcacaggga caaagcctcg ttcccatgag gtcatcacag aggaagaggc cggcccgtga   120

ggtcagcgct ggaggccatg tccatgttct atggtgtcct cagaggcttc cttcttgtgg   180

tataataaca gagacgacgc cttgttccat gacattcctt cctgtggtgt cactgcagag   240

acaatctcac ctggatgatg tcatctctaa ctccaaggcc tcttttggca tcatcgccat   300

ggggaagata ttttctccct gtgtctttgc agcagagaag atgcctctgt cctatgatgt   360

catcattaca gacaaagcca tcttcctggg acacgtcgca ggggaaaatg cctcaccgat   420

tgtgtcctca ctagacataa ggtccccttt tcacaacatc atcacaggga ccctgcctcc   480

ttcctgtgat gccatcacca gagaaggtgc cttgccctat gacgtcatca gagggaccgt   540

gcctcttcct gtgatgtcat caccagagat gaccacccac tctgggacct ctccaggagg   600

aggtcccttc tgtgatgtcg cccagatgct atgtgctctg agatggcaca aagagatgcc   660

tccactgctg ccaccatgtt gtagaaggca gggcaggccc agagtccagg accaccccag   720

ggaagatgcc agagagcaga gaggggccct gtcctgagat gttgtctgaa ggaagcatcg   780

ctggggagcc gcccatgtgg agggcctcct ccagagatga tggtctgtgt aggctgttgg   840

cagtgacacc cctaccccca atgctgtgat ggcatcacca gagcttcctc ctcagaggca   900

ctgcccactc tggaaggcca tcggtattgg tggtgtcacc agagttactg ccttgtccca   960

ccatgactta gcttggttgc tccctcccca gactccaggg acatgtccag caggatctct  1020

gccagaccct ctgaggggaa atggggcctt ggatcccaca tctgtgccat gactcctggg  1080

agacaggacc tccagatggc cttctgctcc caggaggcca ctctggatca ccaggatcct  1140

ggagttctgg cactcatagg tgtcccatag cctggcctca cttttctttc tgccatatct  1200

agagacaatc acctctgtca acaaagtcct agccttctac tggggggagg tgcttggggt  1260

acacctactc ttgccctcac tgacactgtc agcatcacac aacacccgcc actcatgatg  1320

gcaccacacc cggggtcaag tgttacccat gtctgaggat ggaatccttc cccaggatta  1380

cctatgaccc acaactatgg tatcatcttc ttccaggatt taccatgact aatggtgtca  1440

ccatctgcca agactcccca tagccaatgg tgtcaccatc ctccatgatt cctcacaacc  1500

atggtgtcat catctttcag gagccaccac agctgacggt gtcatcatct cctagattcc  1560

accatgacca gtgatgacat taccttccag aatccactac acctgacaga gacatcctct  1620

actgaaatcc actaggactg atgattccac catttcccat aatccctcat gattttggtg  1680
```

```
tcatcacctc ccaagaccca tgatgcccaa tagtgtcatc atcatttgca gggatgcatg 1740

gtgtcatcat ctccagggat ccacttcaac catgtgccac cacctcccag gatttcattc 1800

aaacatgtgc cactacctcc cagtatccac ttcaactatg gtgttatcac ctgccaggat 1860

ccacgagagc caatgctgtc accatccact aggatccacc ataaccctgg tgtcatcatc 1920

tcctgtgatc catgaggtcc agtgctgtca ccatccacta ggatccacca tgaccctggt 1980

gtcatcatct cctgtgatcc atgaggtcca gtgctgtcac catccactag gatccaccat 2040

aaccctggtg tcatcatctc ccaggatcca tgaggtccag tgctgtctgt caccatccac 2100

tagtatccac cataaccctg gtgtcatctt ctcccaggat ccatgaggtc cagtgctgtc 2160

accatccact aggatccgcc ataaccctgg tgtcatcatc cgtgatccat gaggtccagt 2220

gctgtcacca tccactagga tccaccataa ccctggtgtc atcatctccc aggatccatg 2280

aggtccagtg ttgtcaccat ctactaggat ccaccatgac cctggtgtta tcatctccca 2340

ggatccatga ggtccagtgt tgtcaccatc tattaggatc caccatgacc ctggtgttat 2400

catctcccag gatccatgag gtccagtgct gtcaccaccc actaggatcc accataaccc 2460

tggtgtcatc ccagagtcca ctgtaaccat gtgccatcat cccccaagag ccatcatctt 2520

aggagccaag taccgtgacg ggctgtattt cagttgtcct ctggggccgc atggtactta 2580

cagttgttca cttaagggga accagcacaa caggccatat tcccgtttcc actaaaagga 2640

caggggtggg gccagctgtc cccctctgaa gacttcaccc ctactctggc cctccttatg 2700

tcactgcctc actcctgacc gaggatgatg cctgcatcaa tcccaccaca gatgtggcct 2760

cagccaacct caccttaccc cccggtgagg cacccaggcc ccccctgaca gcagcgctgt 2820

ccctcaccca gccatctgat tggtgacagg gtcaacccag caacctctca ttatcaccag 2880

agaggaagca tttcaaccct caggtgacgc cactgcccccc tgcccaatcc ctgtcacttg 2940

ggcccctacc aggatcagca ctccactggc cccggccaaa ttctcctcag agatccctga 3000

cccccgcggg atgggtcaaa gctggtgacc gactggggcc ttcagtgctg tcttctgctg 3060

gcctcatcct gcagcaggga cactggagag caatggtccc tgccagcaca tctgcgggga 3120

ccaggggtgc tccttcacct ccctccctaa caccttaaca cccgggggagc ctccgggggt 3180

ggcaggaagt ccccagcacc caatgcacaa tcttccctca attctctttg tacatagcca 3240

tgttgcgggg gcggccattc ccccactctt aaagggctac acgcccctcc cccagcccct 3300

agggcgaggt gggggggggcc tcttcttcct cccctgggcc gtcccctcc ctcttatgtc 3360

tccccgcaaa cactggcacc tcacactcct tcttgtcagg agcttggggc agacaactgg 3420
```

```
cccttggttc ccaccacact gaggaaatgg gggttaccca aatccacctg ggccctggtg    3480

ccagtttttc aaccccacgg cttctagctg ctctgagggg ctcctcccat cccttccagg    3540

gcctccccag ccccgcactg ctcaggccaa ctgtgacttc cccagaaagg agccagcttg    3600

agcacccacc ccctcccagc cccctcccct ctgctcaaca cctccgcgga acactcagct    3660

ttctccagct gccgggattt gggggtctgg gcctttcagc ttttttatcc ccctccact    3720

agctctagcc cagcctggat tccagggatc ccacccctag ccctgtccct attcagttgg    3780

cacaggctgc ctgaccctgg ggccttgatt tgatctcaaa taagccatag aggagagagg    3840

tcttgagggg tgggagcagg tgtgtactga caattcccct ccacatgtct tgagctggga    3900

cctcgtcatc tgagacttcc ccatgcccca acaaatgcaa atgcacacaa acccatgcat    3960

acacaagcac acacacag gcatctcccc gtctggttgg gggagcatgg gaggggcac    4020

ttcacaggga gaagataaat agttccacac ctgaagaccc tccaacagct tctgcctccc    4080

tcctcatcac ttcctctctc cacccctct ccaacactgg ccccttcccc taattaattc    4140

cctggtgagg acagccagag gagctgcgac ttggtatttt ttggaataaa tagacatttt    4200

cctg                                                                 4204
```

<210> 597

<211> 4490

<212> DNA

<213> Homo sapiens

<400> 597

```
aggtgctgga ggagcgccag cggctgtggc tggctgagct gaagcgcctg tatgtggagc    60

ggctgcacga ggtgacccag aaggctgagc gcagcgagca caacctccag ctgcagctgt    120

ttatggctca gcaggagcag cggcgcctgc gcaaggagct gcgggctcag cagggcctgg    180

ctccggagcc tcgggccccc ggcaccctcc cagaggctga ccccagtgca cgaccagagg    240

aggaagcccg atgggaggtg agagatgaca cagggctccg agactctccc atctccattg    300

ccggtccctt cttctgcctg cccccctccca aaccggctcc ccacacccta ctttgcttgc    360

gtcctcccca tcccccaggt gtgccagaag acagcagaga ttagcctctt gaagcagcag    420
```

ctgcgtgaag cccaggcgga actggcccag aagctggcgg agatcttcag tctgaagaca   480

caacttcggg gcagccgggc acaagcccag gctcaggacg cagagctggt ccggctgcgc   540

gaggctgtgc gcagcctgca ggagcaggcc cctcgggagg aagccccagg cagctgtgag   600

actgatgact gcaagagcag gggcctgcta ggggaggcag gaggcagcga ggccagagac   660

agtgctgagc agctgcgggc tgagctgctg caggagcgac ttcggggcca ggagcaggcg   720

ctgcgctttg agcaggagcg gcggacttgg caggaggaga aggagcgcgt gctgcgctac   780

cagcgggaga tccagggagg gtacatggac atgtaccgcc gcaaccaggc actggagcag   840

gaactgcggg cactgcggga gcccccccaca ccctggagtc cccggctcga gtcctccaag   900

atctgaggcc agcagagcga gctgacagca gcaacactgt cagaaggtgc cctgagacgg   960

ccggctcagc cttcccttgc actggttggg gtggaacctg cagaggccag cccggggctg   1020

gggaggcgca aggagaggag ggatccagtg gggccgtggg ctgggtaggg tgccttggca   1080

ggagccagga caaggccctc ctggcagagg agcacctagg cagggcccag ccctgcttcc   1140

tggagtggat gtggcccaga gaaggaggct gggggatcac cagccccaag gtcccgaagg   1200

gcaggtcaga gggagagagg ctggagacct gggctggggc cttcctccag ggaaggaggc   1260

tggggtggga acactggcct cccccagaat aaaaccatgt tttctaccag aggctcagaa   1320

tacgctgagc ctgtgaccag aggatgatgg atggtcggga ttgaggctgt tgacctgggc   1380

agtagctcct cccacggcca gtggtcagtg ggagggtgtg ccctgcgcct gtctgcatgg   1440

ccactgggca tgtgtgttgg gagcagagga gtcctactcc ttgcctcagc cccacacggt   1500

tccttagctg ccgtgtgggc tgaaattcct ttctttagca ccagtggagt tttcagaagg   1560

aacaacacca gggaatgcca aaaaaacaaa gggcaagtca accaaggcat tttgagaaca   1620

tgaaatgtct tcttggtggg aaggctgggc cccaggagta tccacaggct caggccatgc   1680

ccctcccccgc acccacctcc tgtctccctc cctccctcca taggagtggg gggcccctag   1740

aagtgctctg cctcattccc tgttcgtagg aaggtgcagg agaggaggtg ggcaagctta   1800

tgggtttctt ggtaaagagc ctttaccaca gcaaggaatg ggaacatttc cccatcagca   1860

acggggctct agggcattat taagtagggg tgaaatatga ttgatttgca ttctggaaag   1920

ctctcccagg aggaagcatt ccccacccca ccttgcctct gtcctgcgct gggctccagg   1980

acggtcagtc ctcccagatc cctgctctca gctaaggctg gtccctaaaa cccacacctg   2040

cctttggtct ctcagaggcc tggcttgccc tctgggcctt tgctcccccg ctgggtgccc   2100

ggcctggaac acaggttctg tctggctgtg tgagtggcgt ctctcccttc ctttgaggga   2160

```
agctcagctt tcttacgcgc tcatcgttgg acaggctgcc atgcattgcg tgcttactgg 2220

gcgccaggtg ctgtgctggg cccttgtgag tgtgggggca caggctgaat tagatgagct 2280

cctgccgcag gggggccctgc acactgatgt cagctcacca gtctcttccc tgacagggca 2340

gctcagggaa cttctgagaa gttatctgca gagagcccca cctcactccc tttggctacc 2400

ctggccgtgc ctggcagccc ctcaggcccc acaggtgggt cctggttgtg aagtggagtt 2460

agtgcacatg gatgtcaggg gacgggtgtg aggcatgagc tggggggggcc ccctttttca 2520

gggcagagaa tgaggcgtgt gcactgtctg ctgtggggat ggtgtgttta tggccatgta 2580

agtggcaggt gtgtgtaaag atgtgcttgt gggtggtggg tgtgtccgag ggggtgtgtt 2640

tgggagcctg gcctccaaaa gccagtgtct gggttggaga cagtgcaggc cccttcttgg 2700

ccccaccctc taccccattc cttcctgtca gccccagtct gtcttggcac tggccaggct 2760

tgggtggagc ctgtgtccca gacagatccc ctaggcctat ctgagaccca tgcaggccca 2820

cacctgagct cctgtctgcc tgaggaggga aaggggggagt ggccaggtca ggcaggccag 2880

tcgtctacac accccccttgg tacccattcc catttcacaa actcctccaa accccaaacc 2940

ccaaacggaa atctctggga caatggctcc tccagagggc ccctcagagc caggtgctgg 3000

ccagatgcct tgatcacagc ctccatggcc aggggcctgt caagccaggg gcccacacac 3060

ctggtgccag ggtccacctt ggtataccag ctcggcagaa cagttcccca cccagcgatt 3120

agggagctgg gctggccagt acaaccagtg gggagtgggt gggaggcacc aaaacttggc 3180

agctgtgcca gaaaccaaag ccaggcccag atgtaggggg aggggcacgag agctgaacct 3240

gagcctgggg cgtctcggag ctggatcccc gtcagctcat ccaggctgga caaaccagtt 3300

cctgggtccc ccagccggct gggtggctct ggggccaacc gaccacaggt gtcactgatc 3360

acaggtgtca ccgtagtggc taccacctca gggcagcccc tccctccagc tggcggggcc 3420

tcagcttccc agctgccctg gcttagcctt ccctgcagcc cctccccaac aggcttggtc 3480

cgggcagcct gctctgcgga aggtggctgc ctcctggtgc tgggctccct gcctctgggg 3540

cctccagtcc ttcactcagt gtcatccctt ccagcagctc cctgggcctc ttggtccatc 3600

ccttcaggct tctgacacac tagtggcctc gagtcactga tagtggtgcc tcctccttac 3660

cttggcaagc ccttgtagcc ctctgagccc tcatcctgca ggcagagccc ctcagtgctc 3720

tgagaaacct gccctgaact caccgcctcc cctgcctggg cactccctcc tccctgcgcc 3780

cacagccccc atgccaatct ccgtcagctc tttctgtgct gctgtaattg ttggtttgcc 3840

tgtctccttt gagctgtggg cattgccggg gtagggtggt gtcttcacta cagctccaga 3900
```

aggcactggt gggatgtgga gtcaggagca accagagacc ccccaatact agaatgggtt 3960

tgagcttggg gtggggtgga tggggaagac ttactctgaa tgttcgttca ccatccgtgg 4020

gcaccaggtc tgtgccaagc acagggactc caggggcagc tgccattcgt tccagtgatg 4080

tatttggggc cttctcaggt gaggaagcca aggtggccaa ggccctcggt cccctgccct 4140

gatagggctt acctgtgggt gggggaggga gaccacacat gtcagaggta gtgaaggccg 4200

ctccaaatag tgactggggc caggcaggcg gaaaagagaa cagaagagaa tccagaagtg 4260

ttcagacaga actagggaca acagaggggc ctccatggtg gcatgggtca gcagagcatg 4320

gagcaggcag aggaagccta tctgtggggc tgggtacatt tctctgagac tcacggaatg 4380

taagtgttga ggtttctgca aagagggcgc aggccctgca gtgacggttc agatattgat 4440

aacccatccc ccttggcagg tgggggctta ggcatccata ttggattcag 4490

<210> 598

<211> 4949

<212> DNA

<213> Homo sapiens

<400> 598

ggcgcgctat ggaccccgcc tcgcggagac gcctggctcg ggccttgtcc ccagtgagcg 60

gctggagcgg ccgcggggtc gcagagcctc cgggaccccg aggaagggcg cccctcggag 120

ttgcccgagg ccgggcccgg cgtccactcg ccactcgcct cgcccctccc cggccccgca 180

ccgccctcca ccccgcctcc ttcgggttcc ttctgcgtcc ggcagagcct gcgcgcctca 240

cccggacggc cacggactcg cagcctcggc gaggacgctg cctgcgtccc gactgcctgg 300

acctccccgc gtggctcccg gcgaagccca gcagtcggag ggtgccaggt ccgcctgacg 360

cgcccctccc cacgggaaga acggggcggg ggtccaggag ggacgtaagc cgggctcccc 420

cggcgtgttg atccgaaccc gcgcgggaaa acttgcgcaa accaaaggag ggaagagtca 480

ggcagccccc agcccccccag ggaggcccag gtgaaaaaca gacgccggcc tcgcctctcc 540

cggtgcggat gatcccggca ctcccacccc cgcccctgct gccccgagtt cggctccctc 600

agccccacat cctctctggt cgtctaagtg gactgcagct gctcagggag catgtcgcga 660

```
aggataggga aggacagggg gtctgcttcc ccagccgccc tccagacccc cagggctggt   720

aggggccggc aaccctatgc ccccacctgg cctgctgcag gtgaggggg cacaccaggg   780

taacacagga gcgggagggg gagaaagcct ggctagagca tccacctcat aggcaccttc   840

cttgtgtcca gggtgcagat gccagggctc tgaggccctg aggtcctgtc tggggcgagg   900

gggcttcctc catccactgc atccactgcc cggctgagtc tggaggccac tgagcaagca   960

gaccctccaa agccaggcac gctcaggccc tcacatggtc acggtgctta tgctctgggc   1020

cagcctggat tgctcatccc tagctgagat tgggattcac agggtcttcc agttccccct   1080

tttctttctc tactgattga gaaacacaga gtcctttgat tgctctggga cctggccatt   1140

gcgtgttccc tgcagccttg aacccagttc aatggggccg ggcacattcc ctgataaagc   1200

tgtttaggtt gcttgaaaac acgatcaacc ctattgctaa acacgtagaa actggccctg   1260

ccctgagccc aatcccttaa actctcatct aagctccata gccagagtcc cttgctgcaa   1320

atgtacctgg gtggagcatc ccttgcctca tcatcgatcc caagaaagct gaagctccat   1380

gtgaaaattt ccggaagaaa tgctctggac tgatcaccct ggcgtttagg gcttctttcc   1440

ttggaatccc aaccaattcc atcgcgggac tgtttgggga agtcttttga ggcaactccc   1500

ttgctgccac ttttgggca actctagcct cctcatattt ggccagatag aacagttcca   1560

agctgtaaat gtttccagga aaaaatctca actacaaaga cactttcaag gtgctgcatt   1620

tccaacagca ctctccgtat ccgagtggac agcccagagc aatggtgctt ccaatccaca   1680

gagcccctcc acaggtccct tgccatctgc agacacccac atctcaagac ggggtttctc   1740

catgttgagg ctggtctcga actcctgacc tcaggtgatc tgcctgcctc agcctcccaa   1800

agtgctggga ttacaggcgt gaaccaccgc gcccggccta ggatttcctc ctttgacgat   1860

gaatagttct ccactgtagt ctcactcttt ctcccaggct ggagtgaagt ggcgtgctct   1920

cagctcactg caacctccac tcgccgctcc actccctggt tcaggcagtt ctcctgcctc   1980

agcctcccaa gtagctggga ttacagtccg gctctgtcgt ccaggctgga gtgcgatggt   2040

gccatctcgg ctcactgcaa cctccgacgc ccgggttcaa gcgattctcc tgcctcagcc   2100

tcccgagtag ctggaactgc agccagagac ctccacggcc ggcaacgccc ctgcgcaagg   2160

cctcacggct ccaggctgtt ggaggtacct gcccactcaa cctgggctgg ctgttggagg   2220

tacctgccca ctcaacctgg cgggctgtgc gtggcttgtg ctttgggctg gatcccacgc   2280

tcgccatggg atctgcactc ggactgcagc tgggccgggc atgccatgac ctgcttccac   2340

cttgggtgcc gacgtctgga tgagaggaac atggtggcgc ctgaaaaatc tggagacacc   2400
```

```
agaaaccctg gatccccaaa ggaagtgtta ttcccgctgt ccgtgctgtg ggtgtgaaga   2460

tgtgtgctgc acatcccagt ttccagcaca ggacaaagac tcagagaggc acctgccagg   2520

agtctcaggt gatggaaccc agtggcgggc atgtgggcag ctgccccagg tggaagggat   2580

cgtggcacag ctcttggttc cccaggctgg ccctgacctt cgtgctttcc tgcccatggc   2640

ccagacttcc gagctccatg ttggggatgc tcagggacaa cccttcagcc tcccccacca   2700

tgtcccggct actgcccagg attcttgttc tctggagggt ggatccagcc ctccccatct   2760

tggtgcccta ccagggccag gcttcccatg gctctttctg cagctcctgg cacagactgt   2820

ggggcgcaca gcccggggag cagtgggcct tggaggggcc aggtctgcat gttcccaccc   2880

ccatcatgga gtttgacacg ccagtgggca ggtaactcaa tcccccctca ccttctcttc   2940

atctgttagg ggtgacaggg tgctccccgt ggggccaaga ggatgcagca cccccaccgg   3000

ctacccttcc ggccacaccc ttctctcctg gcccaccttc tgagctggca gggcttcctt   3060

cctggcttct gctgggcagt gtattagggt cctctagaga gacaaaacca ataatggagt   3120

ttaggagagg ggattttttat ttgtttgaga cagagtcttg ccctgtcacc caggctggag   3180

tgcagtggct cgatctcggc tcactgcaac ctctacctcc caggtcgaag tgattctcct   3240

gcttcagcct cccgagtagc tgggattaca ggcacccagc accacaccca gctactttt   3300

gtactttag tagagacggg ggtctcacca tgttggccag gctggtcttg aactcctgac   3360

ctcaggtgat ccacctacct ctgcctccca aaatgctgag attacagggg agagctaccg   3420

cgcccggcca ggagaggggga tttattaggc gaactggccc acacacttat ggaggctgag   3480

aagtcctccc ataggctgtc tgcaagctgg agacctagag aagctgtaag tgaggctcag   3540

tccaggtaag aaggtggttg aaccaaggaa gccagtggtg taactctcat tctgaggctg   3600

actggccgag agccctggga ggcctctgtg gcaagcctga gtccaaaggc cgaagaacct   3660

ggagtcctga tgtccaaggg caggagatgg gtgtctccct ccagaaaaga gaatttgctt   3720

gtcttctccc tttgtgttcc atctgggtcc ccaaccaagt ggatgtgcct gcccacgctg   3780

agggcagatc ttcactgagt ccactgaaaa catcctcaca cactcagaaa caatgcttcg   3840

ccagctgcca agtacagtgt gtgtgccttg gtcccagcta ctcaggaggc tggggtggga   3900

gaaacgcttg agcctgggag ctggaggctg cagtgagcca tgattgtgcc attgcactcc   3960

aggctggctg acagagagat cctgcctcaa aaaaagagat agatagatag atagatagag   4020

ctccaccagc catctaggct tttttttttt agacagggtg tcactctgtc agccaggttg   4080

gagtgccgtg gtgctgtcat ggctcgctgc agccttgact tcccaggctc aacccatcct   4140
```

```
cccacctcag cctcctgagt agctgggact acagcgtaca ggcacagacc acgatacctg   4200

acttattttt aaattttttg tagagaagtt tcaccgtgtt gcccaagctg gtctcaaact   4260

cctgggctta agcaaacctc ccacctcggc ctcccaaagt gatgggatta caggcaggag   4320

acatggcagc cagctaaggc tccctgtacc ctgttagtcg gctttacagc acctggaatt   4380

gaccgccaca ggccggccca ggtcttcctg cagaaccctt ggggaggcgc tgtgctcccg   4440

agcccggggg tgggtgggtt tatctgaccc gtcctcagga ccgccatgcg ggtggggtgg   4500

tgcagggtgc ccccccacag ggtgccccca ggggaggcac ccccacacgg tgcccggcag   4560

tcctgcctgc ctggagagct ttctctgcag aggagactcc atgatcccag cctccatcct   4620

ggaatctgag agaaggaaca gaaaacggaa ggatgatcca gcctctacac tcacaaacga   4680

acttcttgtt tgaagacata acctttttat tcccaagtct tcccccaaca cccagctttta   4740

ctgaggtata aatgacaaat aaaacttgta tacaggaggc tgaggcagga gaattgcttg   4800

aacccagaga cagaggttgt agtgagccga gatcgagcca ttgcactcca gcctgggcga   4860

aagagtgaga ctgtcttaaa acaaaacttg tatatatttt tggtgtacaa catgattcaa   4920

taaacatcta cactgtgaaa tgataccac                                     4949
```

<210> 599

<211> 4350

<212> DNA

<213> Homo sapiens

<400> 599

```
gctgaaggaa gctacaatca tccaagtggg aagtaatgtc taccgatgtt ctgatttaag   60

tgaatgaagg tcttcttttcc acctcgggaa atcttgaggg ttatgtaaca gcagctttga   120

aaggcttgtg agatgtactt tgtgctagtc catctcaaat cttcaccggc tgtaccaaga   180

acagaaaaaa aaaaggaatt tgagacggga tctcagcatg tttgccagga tggtctcagt   240

ctcttgacct cgtgatccgc ctaccttggc ctcccaaagt gttggaatta caggtgtgag   300

ccactgcgcc cagccatcag aacaaaatat acagctggat gtttgtcaca attctaatgt   360

ccctgcaaag atgagatgca tgaatcacac agcaatctca tcaaaaagat aagaaaattg   420
```

●

```
agactcagag catttaagca gccagcctgg actcacagag atttaagtct cagagccagc    480

actcaggatg agtgccaatg gaagcctgtc cttggagtcc agaatgaacg tcagaagcaa    540

cccagccaca gcaggagact gtccatgaat gtcatctggc tgaacctaaa gcacctctgg    600

atttagatgc actccttcaa ggaccatggg ttctgcaaca gtaccccctc tccattgttc    660

cagctctgac tcagatgggc cctccttgat ggcactccca gcagcacagc cttagcactg    720

ggagcatgac ttcggcaact tcacctatca ttctgaaatg ggaccccaaa agtttggaaa    780

tccggacgct aacagtggaa aggctgttgg agccacttgt tacacaggtg actacacttg    840

tcaacacaag caacaaaggc ccatctggta aaagaaagg gaggtcaaag aaagcccatg     900

tactagctgc ctctgtagag caagccactc agaatttcct ggaaaagggt gaacagatcg    960

ctaaggagag tcaagatctc aaagaagagt tggtggctgc tgtagaggat gtgcgcaaac   1020

aaggtgagac gatgcggatc gcctcctccg agtttgcaga tgacccttgc tcgtcggtaa   1080

agcgcggcac catggtacgg gcggcaaggg ctttgctctc cgcggtgaca cgcttactca   1140

tcctggcgga catggcagat gtcatgagac ttttatccca tctgaaaatt gtggaagagg   1200

ccctggaagc tgtcaaaaat gctacaaatg agcaagacct tgcaaaccgt tttaaagagt   1260

ttgggaaaga gatggtgaaa cttaactatg tagcagcaag aagacaacag gagctgaagg   1320

atcctcactg tcgggatgag atggcagccg cccgaggggc tctgaagaag aatgccacaa   1380

tgctgtacac ggcctctcaa gcatttctcc gccacccaga tgtcgccgct acgagagcca   1440

accgagatta tgtgttcaaa caagtccagg aggccatcgc cggcatctcc aatgctgctc   1500

aagctacctc gcccactgac gaagccaagg gccacacggg catcggcgag ctggctgcgg   1560

ctcttaatga gtttgacaat aagattatcc tggaccccat gacgttcagc gaggccaggt   1620

tccggccgtc cctggaggag aggctggaga gcatcatcag cggcgcagcg ctgatggccg   1680

actcctcctg cacgcgagac gaccggcgcg agaggatcgt ggcggagtgc aacgccgtgc   1740

ggcaggcgct ccaggacctg ctcagcgagt acatgaataa tactggaagg aaagaaaaag   1800

gagatcctct caacattgcg attgataaga tgactaagaa aacaagagat ctaaggagac   1860

agcttcggaa agcagtgatg gatcacatat ctgactcttt cctggaaacc aatgttcctt   1920

tgctagttct cattgaggct gcaaagagcg gaaatgaaaa ggaagtgaaa gaatatgccc   1980

aagtttttccg tgagcatgcc aacaaactgg tagaggttgc caatttggcc tgttccatct   2040

ccaacaatga agaaggggtg aaattagttc ggatggcagc cacccagatt gacagcctgt   2100

gtccccaggt catcaatgcc gctctgacac tggctgcccg gccacagagc aaagttgctc   2160
```

aggataacat ggacgtcttc aaagaccagt gggagaagca ggtccgagtg ttgacagagg 2220

ccgtggatga catcacctca gtggatgact tcctctctgt ctcagaaaat cacatcttgg 2280

aggatgtgaa caagtgtgtg atagccctcc aagagggcga tgtggacact ctggaccgga 2340

ctgcaggggc catcaggggc cgggcagctc gagtcataca catcatcaat gctgagatgg 2400

agaactatga agctggggtt tatactgaga aggtgttgga agctacaaaa ttgctttctg 2460

aaacagtgat gccacgcttc gctgaacaag tagaggttgc cattgaagcc ctgagtgcca 2520

acgttcctca accgtttgag gagaatgagt tcatcgatgc ctctcgcctg gtgtatgatg 2580

gcgttcggga catcagaaag gctgtgctga tgatcaggac cccagaagaa ctagaggatg 2640

attctgactt tgagcaggaa gattatgatg tgcgtagcag gacaagtgtt cagactgagg 2700

atgaccagct cattgcaggg cagagcgcac gggccatcat ggcgcaacta ccgcaggagg 2760

agaaggcaaa aatagctgag caggtggaga tattccatca agagaaaagc aagctggatg 2820

cagaagtggc caaatgggac gacagcggca atgatatcat tgtactggcc aagcagatgt 2880

gtatgatcat gatggaaatg acagacttca caagaggcaa aggcccattg aaaaatacat 2940

ctgatgtcat taatgctgcc aagaaaattg ccgaagcagg ttctcgaatg gacaaattag 3000

ctcgtgctgt ggctgatcag tgtcctgatt cagcatgtaa gcaggattta ttagcctacc 3060

ttcaacgaat tgccttgtat tgccatcagc ttaatatctg cagcaaggtg aaggcagaag 3120

tgcagaatct gggaggagag ctcattgtgt cagggctgga cagtgccaca tcgcttatcc 3180

aggcagctaa aaacctgatg aatgctgttg tcctcacggt gaaagcatcc tatgtggcct 3240

caaccaaata ccagaaggtc tatgggacag cagctgtcaa ctcacctgtt gtgtcttgga 3300

agatgaaggc tccagagaag aagccccttg tgaagagaga aaagcctgaa gaattccaga 3360

cacgagttcg acgaggttct cagaagaaac acatttcgcc tgtacaggct ttaagtgaat 3420

tcaaagcaat ggattccttc taggacgata ggtttttaaca agaaagcttt ttctttcttt 3480

tctttctttc tttttctttt taattccatt tttgtatgca tacctgccag ctcgtatgcc 3540

tctggcatgg ggaaattaag ggaacagtgt ctgtttgcat gtaagatgag atgagatcaa 3600

tactactgat ccatctgtag cctgggaagg agacaggaca ttcctgtact aaggtggcac 3660

agagctgtcc tttgcaacat tctcataaaa ttgggcacag agttcgcatt ggcgcaatat 3720

ttatgggagt gggagggatg gggaaaataa acttaactct acaaaagcaa actctaatgc 3780

atgcaagaat cattaggttg gcaggtatat gcataagtga aaaatctgga agtgtaatgg 3840

tagaacataa aacttgtatt gcttctgttt cagtgcaaaa atgtactagc caatacgctt 3900

aagtgtgtgg cccatgaatt gaacaattta accttgaagt ctatatccgt gatattatgt 3960

cgattttaa ctgaggggaa attaactagt ccagcctaaa atgcttcttt taatctgcat 4020

tctgtttcct cttctagttg tgccattact agtgatcatg tttttttccc ccctttaatg 4080

aaaacaataa acatctattt gagacaatta aaatccttct gggggcactg gaagcacaat 4140

acggtgtcca atcttgcttt catttttttt tcttttaat ttgaaccatg attttgctag 4200

aaatagaagg cccagtggtg gaatattaga gggaaggaaa ctgacaacgt gtgaaagtta 4260

gaggcaaata cataggtgta gcttggagtg ctggtatcta atataccatt gtattcacta 4320

actaactcaa aataaacaca tttaatcttg 4350

<210> 600

<211> 4523

<212> DNA

<213> Homo sapiens

<400> 600

atgttcaggc tggaagactt tagccggaga ggatcaggga catgtaggtg gcagattggg 60

tgaggatcat ggaagaactc actgagcagt tggaggcaag agcaggggtc tagctgctgg 120

tgaagacatc cttaatcact ggatggggt aagccaagag tgaatcttat tctagtgtat 180

ggagcagtgt taggaaatgt tcagatagag ctgtgtctta aatggctcat ttattcatat 240

gttctttcaa acatttattc atttactcac aaatgcttac taagtacctg ctaagtgtca 300

ctagtatgtg tcttagatat cgaaaagatt ctgcagcttt cctcagtaaa catcgactct 360

cagtcaatgt tccttcatat gcagacatga ataaggaagg cgtgaattga ggtgtgaatt 420

aagaaagtgt cacagtcaga tccttatgaa taagaaaaat atagagtaca gattttttct 480

taattgtatt ttttaacttt ttactatggt cgatttcaaa ttaataggaa gtagaaagga 540

taatataatg aaccctcatg tgcccattat cagcttcaac agtaccacct cacagccagt 600

tttgcttcat ccaaatgccc acctgctttt ctctcccaca ttattttgaa gcaatcctag 660

acatcatatc attttttca ttttatttt atttattt actttaagtt ctaggataca 720

tgtgctgaaa gtgcaggttt gttacatagg tatacatgtg ctgtggtggt ttgctgcacc 780

tgtcaccccg tcatctaggt tttaagctct acatgcatta ggtatttgtc ctaaggctct　840

ccctcccctt tcccccctacc cctgatgata tcatatcatt ttatctgtag attttacagt　900

aagtatctct acaagataaa gcttatttct caacctcgtt tattgtctag taagcagtac　960

agattttttt tctcttcgcc ttttttcagt gtggaattgt gggtaatttt ctctctgatt　1020

tagaatcctt gatgacattg aagtttatga agaacagatt tcattcaaac tggaagagct　1080

ggtcactatc tcctctttcc tgaattcttt tgtgtttaag atgatctggg atggaattgt　1140

agagaacgcc aagggtgaga ccttggagct gttccagtct gtccacgggt ggcttatggt　1200

gctgtacgag cgggactgcc ggcggcgctt cacccccgag gaccactggc tgcgaaagga　1260

tctcaaacct agcgtgctct ccaagaact cgacagggac agaaaacggg cacagttgat　1320

cctgcagtac atcccacatg tcatccctca caaaaacaga gttctactgt ttcgaaccat　1380

ggttaccaag gagaaggaga aactggggct ggtggaaacc agctctgcct ccccgcatgt　1440

cactcacatc accatccgcc ggtccaggat gctggaggac ggctacgagc agcttaggca　1500

gctctcccag cacgccatga aggggggtcat ccgtgtgaag tttgtcaatg acctcggggt　1560

ggacgaagca gggattgatc aagacggtgt ttttaaggag ttcttggaag agatcatcaa　1620

gagagttttt gacccagcac tcaatctgtt caagacaacc agtggggatg agaggctgta　1680

cccctcaccc acatcctaca tccatgagaa ttacctgcag ctcttcgagt ttgtgggggaa　1740

gatgctgggg aaggctgtgt atgagggaat tgtggtggac gtgccatttg catccttctt　1800

cctgagccaa ctgcttgggc accaccacag cgtcttctat agctcggtgg atgaactgcc　1860

ttctctggac tccgagttct ataaaaacct cacctccatc aagcgctatg atggggacat　1920

cactgacctg ggcctgacgc tgtcttacga cgaggacgtc atgggtcagc ttgtttgcca　1980

tgaactgatt cctggaggga agaccattcc tgttacaaat gaaaataaaa ttagctacat　2040

ccatctgatg gcacattttc gaatgcacac tcaaataaaa aaccaaacag ctgccctcat　2100

tagcggattc cgttccatta tcaaacccga gtggatccga atgttctcaa ctcctgaact　2160

gcagcgtctc atctctggcg acaatgctga gattgatctg gaagatttaa agaagcacac　2220

agtctactac ggtggtttcc atggaagtca cagagtcatc atctggctct gggatattct　2280

ggcctccgac ttcacaccgg atgagagagc tatgtttctg aagttcgtga ccagctgctc　2340

cagaccccccg ctcctgggat tcgcctacct caagcctcca ttctccatcc gctgcgtgga　2400

ggtgtcggac gatcaggaca ccggggacac tctgggcagc gtcctccggg gcttcttcac　2460

catccgcaag cgggagccag gcggccgcct gcccacctcc tccacctgct tcaacctgct　2520

caagctgccc aactacagca agaagagcgt cctccgcgag aagctgcgct acgccatcag 2580

catgaacacg ggctttgaac tctcctagct cctgtcccag ccctgcctcc agggctcctg 2640

ggctgccagg gaccttcagc tcccagaggc agtgtggtcc tgggaatgtg accaacatgc 2700

caggtgacat tggcccctag accctctcta tagccatgag actccttgtg gcctcaagaa 2760

atttagacgc ccacgacagc actacacagc atctccaggt gatgcccaag gcacagggct 2820

gcagaaaata aacctccaga ttccaccaac acgggtccat tcttcctggt gatggcagag 2880

gggcttcttt tagctagttt gatcttttgg gagtctgtct ttccttagcc gtctgagtga 2940

gctgtgtatg aacaagtccc aggagttcca agagtctaga gtggtttttg cagcatgggt 3000

tgagtgtaca aagcctactg tgcgtgagat cctctccttc cgtttctgaa atctcttact 3060

caggtaaggc ctcgccaagc ctctatgcac cccacaaagt ttctgcctcc atgccgtccg 3120

cagcgcctct tcccagacag ccaggcccat ctgctgccca gggaagcgca ggcgcctgct 3180

agggacgcta tggacaccat gagtccaagg cgctgctcct gccttgaagc cacgcgctcc 3240

acgccgcggc cctcccattt tctgcgtcct cagcgggctg agctgccaga gagccttccc 3300

ggacctattc ccgtcctatg cattcacatt ggcatcctgg tttgggggaa gaaaaacaac 3360

ggcccttagc agcagccccg tttccagaat gtgctgcctg ttccccaaag cctgcttgtc 3420

ccgcggagga cggctgcctt tgaccctgct tatttgtctc actggttatc taatgaggaa 3480

caaacactaa cctaaggtac acatcccatc tgggcggtgg cttcactcct gagtctgcaa 3540

aatcccagga aacttgggtc ttgctgccca tccttcctca gcacagggaa cccggaagcc 3600

cgttgcactg acagaggctc acaccctctg ggtttttgt ttttttttaa acttcatttc 3660

tcttccaacc cattgtgttc ctctgccctc attctttacc tttgttgtaa gaactttagc 3720

tccagggaac tgaggcagag gccctgtttg tggtctgtgt tgacagccac ccaccctctc 3780

ccacctcatg ctcctgcacc tgcaccacca aggttgatgc cggattcgaa gccaggaagg 3840

cccagtccct cctctgctct cctcaaagac gcaaaacatt ttccaacaag agctgtcaca 3900

gtggcagcaa agcagggggcc acccgtctcc acagtccttc agagtttcag ctgcatcctg 3960

gtgtcccacc caggtcgagc ccccaggctt ctggaaaaca gtgtgtgctc tactttgatg 4020

gaaacatggc aaggaattta aagacaggaa tgtattaata ttattgaagg tgtgttcgta 4080

acctctgatt ctgtggactt gccactttct ccaaacgctc ggttcctttg aagatttctt 4140

ctgaacgtgt gtgcgcacgc tgggcggggtt cgtgcataca tgcggggacc ccagactgtc 4200

agcacaggga agatggatcc catcctaatt tttatcacct gaaggttgga accagtgagg 4260

gactgggaga gagtgattta taagcaccaa tatcaacttc atgtggattt ttgacgaggg　4320

gtagtttgta atttcattta aattcttttc agcagctgga aatattgcac tatctgaaac　4380

actgaatctc cttttgtaac tggtgttcac tgacaccttg atggctcttg atggctctaa　4440

aaagttgtag gattttttgt ttttgtagct aacttatgga ttgagatgtg atcaaaggct　4500

ttattaaatt tgtacttcag cat　4523

<210> 601

<211> 4005

<212> DNA

<213> Homo sapiens

<400> 601

atgactatat gctggagaag tgagagagca aatgaatggc ttatttcatc tccaccattc　60

cccacctcct tcattacatg tcagtaacac caccctgcct gcagcccccct gtatccgacc　120

gacctttcct accttggtgc ctgggccttg ccacccatac ctggaaggag accccacatc　180

ccccctgcat tctccaggcg cagcttagct ctcctctccc tccacgatgc cttctctctg　240

cctgttttcc cccaagcctc atgtcccact cctgtctgcc catagctttt gtgtcttgtc　300

tgtgggctct cgtaattttc ccttgtctgt ttccagcttc ttgagttcag agctttgcca　360

gccttatctt tccacctggt gactctgcca ctgtggtgca tcagcaacac acacagtgcc　420

cactcatgtt ctcccactct ctcagagttt catcttcacc ttaggcacac cacgcacatc　480

cttaagggggg ccatgctagg cattaaagat acagtggtga acaatatatg caggaaaata　540

acaaacaaaa aggtcagcgc tgatagcctg taatgctgtg aaggagatct aatagggggaa　600

taggatgaag ctgaagagct gaggggggtgg gccaccaccc agctcttggg ggtgtgggggg　660

gagggcggtg tggtggcctc agggaggaga tgacattttg tgccacaatt tgaaaggtat　720

aacaatgcaa gccacatgca gacctggggga ttaagtgttc caagcaaagt tgggaaggag　780

caggtgcaaa ggccatgggg cagaagcaag ccagagtgtt tgagagatgg aacaaggtca　840

gtggaaattg ggtcatctgg gatgtgaggt ctctgtggcc agagaaggct gtgaagagcc　900

cctgagtgca acgactacaa ccctgggttt agctagtgcc tctcaggtag gggtagtcag　960

```
taactgttta ttctgtagaa ttaaaaacct ttcccttatc ttcttcctta ttctgtacat  1020

ttgtcactgg ggtactaaaa gttgatgatg gtctgcttca tgtggcttag agtgaggtgt  1080

ccctagacta gggtcagcga cgaacctttc ctgctataga taatgagata tggataatgg  1140

tgtagcccca tgttctggcc agggagggaa gcagagggtg cccttgtccc ttctgtgctc  1200

tcccagcatg aaaaagtaag accttgaagg tgctgccctt agacatgctg cctcgcaatc  1260

aatggaagca tccagccctt gttggtgact tgagatgcac gccagcctca ggaaacatac  1320

tcaaaataat tgagtatacc ataattcatt agttatcttc tcctacactc taattttaca  1380

cattcttagt atgttataca tgtaggtcaa gttttatttc ataggataga aagccatttg  1440

atcaatccct gtttctccat gtgtaaaatg aaaataacat ctaccttgca gagctgtcag  1500

tgaagattta tcagtgagag aatgagtaaa atccttgtaa aaggttcagt gtatgggggt  1560

acattttaat tttctctagt tgtcaaaaat atgatttatg tgagctgaat aagaaatttg  1620

aattatggtt ttaatttcca aatgagtaaa tgaaagctcc ttgttcctgt agaacgttat  1680

gtaaattaac acagtgaggc tagagaagag acagttttaa aatggtgatg tgacgatgtc  1740

taaactctgt ggtaatagga catattttc atcaatttga ggcaaaacag ataaatgtaa  1800

tctataagga actgagaaga aataactatt ttgtccttaa gaacgataca cctgttaagt  1860

tatgtgtctg ctttgggatt cggtttcctt ttatagtttc ccaacaaaat cgtggcccag  1920

gtagcttgcg atgtccttca gttgctggtt tcctactggg agaagcttca gatgtttgaa  1980

acctctctgc ctcggaaaat ggcagaaatc ctcgtggcca cagttgcttt tcttttacca  2040

agtgcagagt actcctcagt ggaaacagac aagaagttta ttgtgtcctt gctactctgc  2100

ctcttggact ggtgcatggc attgcccgtg agtgtccttc tccaccccgt gtccacagca  2160

gtcctagagg agcagcattc ggccagagcc cccttgctgg attatatcta cagggttttg  2220

cactgctgtg tgtgtggctc aagcacgtac acccaacaga gtcactacat actgaccctg  2280

gctgacttgt catccacgga ttatgacccc ttcctgccac tggcaaatgt gaagagctct  2340

gagccagtcc agtatcattc atcagcagaa ttgggtaacc tgctgactgt tgaagaggag  2400

aagaagagaa gaagtttgga gttgatccct ttgactgctc gaatggtgat ggcccacctg  2460

gtgaaccacc tggggcacta ccccctcagt gggggccctg ccatactgca cagccttgtc  2520

agcgagaacc atgacaatgc ccatgtggaa ggctccgagc tgtcctttga ggtgttcaga  2580

agtccaaacc tgcagctgtt tgtatttaat gatagcaccc tcatctccta ccttcagaca  2640

cccacagaag gaccggtagg gggatcacca gtgggctctc tctctgatgt gagagtaatt  2700
```

gtgagggata tctcagggaa gtactcttgg gatggtaagg ttttatatgg acctttggaa 2760

ggctgcttag cacccaatgg aagaaatcct tcatttctga tttcgagctg gcatcgtgac 2820

acatttggac ctcagaaaga ctcttctcaa gttgaggagg gggatgatgt tcttgacaaa 2880

ttacttgaaa acattggcca tacaagtcct gaatgccttt taccgtcaca gctaaatcta 2940

aatgaacctt ccctaacccc atgtggcatg aactatgacc aagagaagga aatcattgag 3000

gtcattttgc gccaaaatgc tcaagaggat gagtatatcc agagtcataa cttcgattct 3060

gcaatgaaag tcaccagcca agggcagccc tccccagtgg agcctcgagg acccttttat 3120

ttctgcaggt tattgcttga tgacttggga atgaattctt gggacagaag gaagaatttt 3180

catctattga agaaaaattc aaaattattg agagagctga aaaatttgga ctcccgccag 3240

tgccgtgaga cacacaaaat cgcagtgttt tacattgctg aaggtcaaga agacaagtgt 3300

tcaatcctct ctaatgaaag aggaagccaa gcatatgaag actttgttgc tggacttgga 3360

tgggaggtgg atctctccac ccactgtggg ttcatgggtg gccttcagcg caatggcagc 3420

accgggcaga cggccccctta ctatgctacc tcaactgtgg aagtgatttt ccatgtttcc 3480

actcgaatgc cgtcagactc agatgattcc ctcaccaaaa agcttcgtca cttggggaat 3540

gacgaggtcc atatcgtctg gtctgaacac tccagagact accgcagggg tattatccca 3600

actgcctttg gagatgtttc aatcattatt tacccaatga agaatcacat gttcttcatc 3660

gcgataacga agaaacctga ggttccattt tttgggcctc tgtttgatgg agccatagtg 3720

agtgggaagc tgctgccaag ccttgtatgt gccacgtgca tcaacgccag cagggctgtg 3780

aagtgcctca tcccactcta ccagagcttg tatctttttg ctttaaatgt gtaacttact 3840

aaccatccca gaatcaagat tcctggcagt ttttcataag aggtaagtat tcaaaactga 3900

attgaagagg gaagagaatt tttttcaacc tctgttaaaa ataacatagt ggttttttcat 3960

agcatttgtt aatttatatt aaatataata attttatgct gcatt 4005

<210> 602

<211> 4304

<212> DNA

<213> Homo sapiens

<400> 602

```
aagggaaagt gccacatttt caaggcgaga agacataatg aggccaggaa aaaggttttc    60

ttcctaagaa aacactatct atgttgcagt taagcccaaa gcattcatgg tgtatgatga   120

aagaattaaa taatgcctgt gctttggaga cagcggaaag ggtagcaagg gtgtgctgaa   180

ggctgagaat ttgggaatgc tgggggagag aaaaatagaa gagcactcaa agtgagtctg   240

ttcctacatt cacattgtct tggagagaca ggtttgcata gttgtttaca gaggcaggct   300

ctgagagggg tgagcctggg tttcagtctt agttctcttg atcttgggaa agtcacttaa   360

cctcccaact agtctcctca tgtataaagc ggagactgta atattactta tgtcctagga   420

tggctgtgag aattacagga gatagataaa gagcacttag cccactgcct ggcaaaagca   480

agcattcaat aattatcaga tatcactagt aattaataat caggtagtgc tattaacgtt   540

atcattacat cacagcactg cagaagatga aagggcacct agaggttttt tgaaaacacc   600

tgcgtcagaa attaacaaaa gtccagaccc ccacccccac ccaaaaaaaa tgttagcaag   660

attggaaaaa tgagcctttt ccaataggat aaaaaataga ataagtttcc ctgataatcc   720

agccccatta gctttggggg ctggggcaga tgcaacgtag ctgttaaatg gagatctggg   780

agagctctga agagttgttg caacattggc tcagcgtgga agctttgcag ggaattggaa   840

ggcttcatcc cttatttaaa ccacatggag tgagtagtga gtctattaaa aaatcagtga   900

tacctgttgt agcccacacc tcaggatgct gcagcaggcc ttcctcatta gaaggcaggc   960

aggaagacat agagcataac aagacccttt tgtctctcag acaggtggtt cctagattat  1020

tatgtcttcc cagcctcagt ccactgcaag atcatccaga tgttcaagtc tggtcttcca  1080

tgtctagcct gggtttttact ctccacttaa ggaccatggc ctgtgtctct tttccaggga  1140

tggagtctgc tggcatccat gaaaccacct acaacagcat catgaagtgt gatattgaca  1200

tcaggaagga cctctatgct aacaatgtcc tatcaggggg caccactatg taccctggca  1260

ttgccgaccg aatgcagaag gagatcacgg ccctagcacc cagcaccatg aagatcaagg  1320

taccgttcag tgacagaccc agtggcaatg ccgccagcag tgtcagccct ataaccacag  1380

ataagaactc ttcagagact gtattttggt gacatgcaat tgtgggtttt aggggtaggt  1440

agtggacaca aatctcatat tttacaggat gtaagtcaat ctagttcata agaaaaattg  1500

agttacttta tataaaattt gatctctatt tatccttgtc tgtcagctac tttcagtagc  1560

tgcagtcaaa gtcaacagag ctccccacat gctcatctct ctttaaaata tgcattttgt  1620

tgttttctc gacacaaaaa tagtgcatca tgcatgtaac acatttttta aaaatactga  1680
```

```
tgacctagac ttatttctga agaacttcaa acactgtaga tttaggagga gcttatactc   1740

ttcctccact actaacctca atcctgtggc caagaattca aattttatcc tcattcctct   1800

gtctagcaca tcttttggta caggtgctca aaagcacaga atgactctag gatgaccaag   1860

ctcagtccct gagccaccca ggacccctgt atgtggtgtg aatgttgagc cctagtgaag   1920

ggaactcggg gattaaatgg agataattct ttggaggcaa acttaacctg tggctgggtc   1980

acttctcaaa ggttattatc actctctgaa gtcagaaggc cacacttggg accctctgac   2040

ccatgtcaca ggaagtagag gggcaattct agtgcagttc acacacgtgg gtatttaaac   2100

aaattatctc ctctttgcac tcccttctgt ttttagaagg agtatgcagc taacactaga   2160

gagtgtgcta gactgaaaca tgcacacttt ctctctccat gataggctct ggctagtcct   2220

gccctaaaag acttcagcat gagagaagag agactgtttt ccaacagggt ttgtgtttct   2280

tggatgccat tctgatcagc tcttacccccc cttacttcca cacaagaggg aggtgaatga   2340

agccagtagc tgggctcact actgagttga tctcatgagg gtcgataaca gaaagaggct   2400

attgctagag ttgggcagtt cctagttctc taaacttggt ttcttgaata gaaattaatg   2460

tgaaactctg ggccccgatg taatgagata gtatagagaa ccaagaaaaa cctaggacaa   2520

taagatgata acatttggca aaaatgaaac tggatgagag acctatggga actcccatag   2580

aatttgtcat aggctgttct tgcgttgcta taaagaaata cctaagactt gggtaatttg   2640

taaagaaaag aggtttaact ggctcacagt tcagcaggct gtacaggaag catagctcta   2700

gcatcagctt ctggggaggc ctcagtctca gaaagcttcg aatcatggtg gaaggcgaag   2760

caggggcaga cacctcacat ggcaaaagca ggggcaacag agagggcagg ggtggggga   2820

gggtgccaca cactttgaaa taaccagatt tcatgtgaac tcggaagaag agctcactta   2880

tcaccaagga gatgtcctaa gccattcatg agagatccac ccccgtgatc caaacacctc   2940

ctaccaggcc ccacctccaa cacgggggat tacatctcaa catgagattt ggaggagata   3000

tccaaactat actaaattct ttacaacttt tctgaaaatc taaaattgtt ccaaaataaa   3060

aaggttattt ttaaaaccaa accaaaacat aaaaccacct gggagaaccc aggtttgaat   3120

atcagatctg acactgatat aaccggtgtt acctgggcca gttacttaaa ctttctcagc   3180

ctctgtttcc tcatatgtaa tatgggagta atttaagact tattcttcaa gatgtttatg   3240

agaatcaaat gagataatac atgtaaaatg cttagcatag tgcctggcat ataattacat   3300

gctcagtaaa tatcagtact ttgtattaag aagtaaatgc tcagaagata aagattaaac   3360

tggttagcca gttttcactg ttctctgtgc ctaaaccatt catttatttta agaaacatga   3420
```

gcatgccttg caggttaggc ctgtgcactg ggaaaggcca accagtgcag cttaagaggc 3480

acctattgca agggaatgtc cccagcaggg gaccctgagt tccccaatgt taaacagagc 3540

atctgggtga aaagtggtag ttcacttcac cacgtggaaa cacatttgta tactaagtcc 3600

tagcacaatt aaaacttctc ctttgaatag gctagggttt gtttctacag aaagtgtatc 3660

gtgttgaatt ctgaggcaga gttcatggaa atcagaggca ttgccagggt tcttaagtgg 3720

gggccgtggc tggatttgga gccaactttc agtttgctca ataatgtggt cgaagagtta 3780

caggtgagaa aaacgaatgt gcttactgaa gaatttctaa atccatggct ccctctggcg 3840

gtcctgccaa gaacatgaca caattaggac acaattggca tctaacagac aagcctgtgt 3900

ccctgctgaa caagaaacta ggccatggta gaacatccag gctctgtcct accgcactaa 3960

cgactgcact aatgatgaca ttaatgacca ttctttttca tcttgactga cagatcattg 4020

cccctccgga gcgcaaatac tctgtctgga tcggtggctc catcctggcc tctctgtcca 4080

ccttccagca gatgtggatc agcaaacagg aatacgatga agccgggcct tccattgtcc 4140

accgcaaatg cttctaaaac actttcctgc tcctctctgt ctctagcaca caactgtgaa 4200

tgtcctgtgg aattatgcct tcagttcttt tccaaatcat tcctagccaa agctctgact 4260

cgttacctat gtgttttta ataaatctga aataggctac tggt 4304

<210> 603

<211> 4505

<212> DNA

<213> Homo sapiens

<400> 603

gtaaaccagt cctgttgtag cccttgtagc atctgctgta gtgatctggt ttgggtttca 60

gtattacttg caatggtttg gaaggaaatg ggaagtttgc cttctaacta cattttcttt 120

ttgattcaag aaccctagca gttctacaac cactgggcct aaaactaaaa taaaggaaaa 180

ataaataaaa ggaagcaaaa acatctaact gggatggcct ggcagcattg ccagagagag 240

tcctcagggg cccatgcttg ttctgtcttt tgctctgcca tccctagggt ggacagcacg 300

gaagaggcag tacatcttaa caaaatcagg gttctggatg aagggagggg tggtgaatgg 360

●

```
ttgctgcaat caacagttca tacttcaatg gaaagaaggt gggatttgat tcctggctgc   420

aaatcttcac tctgtcacct gctatctgtg tgccctcagg taagtcattt aacttttctg   480

ttcttcagtt tccttatatg caaaataatt cctactttgc agaatggttg tgggaggtag   540

agttatctta agacagtcta gcacagtgtc tgctacatgc tggaattcaa aacattccct   600

gctgttgcta tggttggttc tgagagctat atttaatttt cttttagtc tttcttgctg    660

gtctgtcact ctcttactat aaggaagaca gccatttctg cataggtcac tatgcagtag   720

cctttctat tttttgacgg cttagcatct atgtaatatc ccactgaatg aaaatactaa    780

aatttatcta ttgtactatg aatagacgat ttggagtttt cccagttttt ttactattac   840

atacagtgtt gctatgtata tgctgtggta cacgtgtata gccatttctt cagggtagaa   900
```

●

```
acaaagtaac atttctgggt catatgatat gcctgtcttc aactttacta tataatatct   960

gacatctttc caaagtggta tgccagttta tcttcccact ggcagcatat gagaatttct  1020

gttgctccag ctacactcca acagattctt aaagctttgt cattttgtag ggtgtgtagt  1080

ggtatcttac tgtggttttg acaagtttcc atttgttggt tatttgcaag tatcttgcct  1140

ccctcccagt cacttgtcta ttcattcttt ttataatatc tttagtgagt agagttctat  1200

gaaaaattat tcttatttat gtatttttgt agagataggg tctctctgtg ttgcctagga  1260

tggttttgaa ttcctgacct cgagagatcc tcctgccttg gcctcccaag gtgctaggaa  1320

tacagttgtg agctaccatg cgcaggctta aagttcttcg tttttagtgt agttaccgtt  1380

ttgttctttt tttattacta cttTccccTt atcattggtg ctttttgtta cttatttaaa  1440

aaatcttccc atactcagga tcgtgatggt attttcctgt acaaccttct aagagctgta  1500
```

●

```
ggctttcaca tttcatgttt aggtatttaa tctaccttgg aattgatttt tgtgtgttgt  1560

gagaagaatg cttatagata cccaattgac ccagtgcctt ttactggtca tttctcaatg  1620

actctgcatt cccacctctg tccaatacca cgtgtctatg tatgtgtgga tctgttttgg  1680

ggctcttcaa tctgttccat tggtctattt gtttatcagc gtctcactgt cttgatatct  1740

gttaatataa attctttctc cttactcttc aagagtgtct tggctatctt tggccttta   1800

aaattcccat atacatttt gaatcaactt gtcgccctcc ctcccaaaaa acccaatta    1860

ggatttttat cattctagga ctatggtaga tcccttcatt tatttagatc tacctaaatg   1920

tctcccaata tcatattaga ctttttgtgg aggatttgta tgtctttagt aagtttatt    1980

actaggcact taatattttt agtatgctta ttgaagtaaa attgatatgc attaagtgca   2040

taatatttaa agtatacaaa ttaataagtt taatatatgt atacaccctg aaactgttac   2100
```

aggaaagggg tccagatcca gacgccaaga gagggttctt ggatctcatg caagaaagga 2160

ttcagggcta gtctgtagtg caaagcgaaa gcaagtttat taagaaagca aagtggtgaa 2220

aggactgcta ctccatagac agagcgggac gttcccgaaa ctaagaggag gaacgcatcc 2280

accctaggta caatgcttgt atatatggag agatgtgctc tgctacaagg gtttgtgata 2340

aactattaat tttcttaatt atggtatttg gcaagaatca atattattat ctttcaagca 2400

aaattaggaa tgcctttgtt ccccagatat tgggatatct ggacactccc gagtctgggt 2460

ctgttttagt aaacattatt aatttgttcc cttaaccgta aacatctaga ggctaagaat 2520

gcctaacttt ctgggaattc agtccagcaa gtctcagcct cattctccta gccctcactc 2580

aaagtggagt cgctctggtt cgaatgcctc tgacaaaacc atcaccacaa tcaaggtaat 2640

atagtaaaca tatccatcac ccccaaatac ttcctcatgg cccttctaac ccttccctct 2700

tactccttcc tgcctgtaca tcctcccact ccctgtacct aggcaatctg ctttctgtcc 2760

ctatagttca gtttacactt tgcagaattt tatataaatg ggatcataca gtacatactc 2820

tttttgatgt ggcttttttc atacagcata attatttttg agatttatct aggttatagt 2880

gaatatcaac tgttaattgc tctttaaaaa acttttaact tcaaaacagt tatatattca 2940

caggaagttg ccaaaatggt agggtctgtg tacccttcac ccagtttctt tgaatggata 3000

tatcttacat aatcatagtg cagcatcaaa accagtaaac ggacattggt gcaaggtgta 3060

tgtatagttt tgtgccgtct tattatatat ggagattcgg gtaatcacca ctgcactcta 3120

gtctgggcaa cagagtgaga ctgtgtctca aaaaagaaa aaaagtttaa atactatata 3180

tttttctaaa aagaggagat gtttctgatt tctcacaatt tgatttttc ttattgaatg 3240

aacttgtagc cctaggggaa gaacatcagg gcattctctc aaatcacctg aagagcagtt 3300

taaaaagcag gttccaggcc tattcctaga gattctggtt tagtaggtct gtggtacaaa 3360

atccaggtga ttctttctca tgctactagt tttccagggg gcccaggctt gagaaacatt 3420

ggtcctgcag catcttccta ccttttatt gctgatgata aacaagattc acgaggatca 3480

tccttgcagg attaaatctt tagctctgtg ttgtcccaaa tctggataat ataccactgt 3540

tcgttaactt aatatacaaa ttgttggtag ggatatcctt gtttcatatt ctaaaactgt 3600

gtagtaccac ctaaaacttt ttggatggat ttctgtttat atcatgaact attttaattt 3660

acaaatctta atttataggt gaatcagtgg ctaacctggt tagaaactgc tgaagaagaa 3720

gaatcagagg aagaagctga ctaaagaacc agccaaagcc ttaaattgtg caaaacatac 3780

tgttgctatg atgtaactgc atttgaccta accactgcga aaattcattc cgctgtaatg 3840

ttttcacaat atttaaagca gaagcacgcc agttaggatt tccttctgca taaggttttt 3900

ttgtagtgta atgtcttaat catagtctac catcaaatat tttaggagta tctttaatgt 3960

ttagatagta tattagcagc atgcaataat tacatcataa gttctcaagc agaggcagtc 4020

tattgcaagg accttctttg ctgccagtta tcataggctg ttttaagtta gaaaactgaa 4080

tagcaacact gaatactgta gaaatgcact ttgctcagta atacttgagt tgttgcaata 4140

tttgattatc catttggttg ttacagaaaa attcttaact gtaattgatg gttgttgccg 4200

taatagtata ttgcctgtat ttctacctct agtaatgggc tttatgtgct agattttaat 4260

atccttgagc ctgggcaagt gcacaagtct ttttaaaaga aacatggttt acttgcacaa 4320

aactgatcag ttttgagaga tcgttaatgc ccttgaagtg gtttttgtgg gtgtgaaaca 4380

aatggtgaga atttgaattg gtccctccta ttatagtatt gaaattaagt ctacttaatt 4440

tatcaagtca tgttcatgcc ctgattttat atacttgtat ctatcaataa acattgtgat 4500

acttg 4505

<210> 604

<211> 4473

<212> DNA

<213> Homo sapiens

<400> 604

attgctcctt ctccatccgg gttcttgtgc gtgcgcttct ctctgctggg aagatccatt 60

gacaccttgt ctctttggag aaatcagacc cccttgttct gaggcttcca gagacaagag 120

ctgccgagac tttggcttcg ctggaggaag tcccataaag atgggaagag tggctgctgc 180

tctgggatgg tgtgaaggcc atcctgcaga ggcagagggg tacattggtg gtgtccccat 240

gactaaatgg atcctacctc ttgtccctcc catcatcctg aggatgcctg gggactggtt 300

cttcagggca tgctttctcg cctgccggcc ttccaccatg ggatgaagca gcaagaaggc 360

tcttgccaga ggcagacccc tcgaccttgg acttcccagc ccccagaact gcccatgctg 420

tgcagactgg gatgtggggg tgcacctcag atgagaagga gagtggtaca ggagctaccc 480

agctgctgtt tgaggaatgg atgttgtgtc cacagtctgc cctcacccct tgtcaacggc 540

```
tgggagcacg taaactcttg caaattattt aacctctctg tgcctcagtt tcctcactat   600

aaatcgtgga ttgtaatcat gcacctgctc ctctgagctg ctgtgaggat aaaatgcatc   660

tttatgaagc ccttctgaac tggggcggtg cctggcacgt agcaatcacc actcaggagg   720

gtcagctctt cctgccaaag ggttagttcc tggtccccca gggtggggag gccctagaaa   780

ggccctgagc tttcacaagt ttaggtgctt taagtctggg gctcccaggg tgctggggag   840

cagaccagtg ggagtttagt gggcagagtc ctgcctggct cacccggccc catccgtctc   900

cggtgggctc ttctgctgcc ggttgtacag gaagaagaca gtgagcacag cacctaggat   960

gaggaacacg gccacggtgc ccgccaggag cctggctgca cttcccagac ccctctgggg  1020

gcggggcttt tctggaaaca aaagacaggg aagaggatta gagagagaaa ctcaagtgac  1080

ccaaagagag tcagagatgt gagagagtca gaccctgagg cagtactctg cctttgacat  1140

tgcaccccca gctcccctcc ccatggtgct ccagttctag gaggggctcc cagccggtgt  1200

gggatggagg ctcctcctct agttccctat gaccctgtaa ccccagaccc tgctctgatc  1260

ctgggatctg gggcatggag gtagaacaag ggtgagggta tctcctggac aggcagcagg  1320

tgctgagatg gggtccccac cccgtcattc catttctggc cctgcaggga agattcctgt  1380

tgaggagttt aacttctttc ccctccctgt gcaattaaac aagcaaatga actaatgggt  1440

gcttcaccct cccagcttgg gacagagggt gaggatcagg agggaaaggc aggagctggg  1500

agggtcgatg aagaaggggc acctgggggt gcctcccggg aaaccaagcc tcttcagtac  1560

agatgggtga aaagcccaga gggctgtggt ctaaggtgag ggggctgagc ccaccttctg  1620

gacccacctg gtcatggacc cagaagattg ctgggcttgt cgaggtattt cacagtctga  1680

gctggagaca ctggtctgtc cctgaagccc aggaggctgc agagactgac cctgtggcca  1740

ggggcacatg ctgcttctca gcgatccagg cttggctgtg aagccacagc tggcccttcc  1800

agttcctcct tctgctgggc tcgatttctc acctctgacc tttacgaccc cagcgtggag  1860

tggggggtag ggactaagga gaaaatcaca cacttatgta ctccttcctc tccactaccg  1920

tattacatat aattaaacac ggagagcacc tgaatagaga tgccaaattg cagtttgcag  1980

taaacatcat ggagccaatt ttcctaaagt ggaattgaca agtcccttcc actcactcac  2040

tcacttactc actcactccc tcctcattca ctcactcact ttctgtctct ctccccttct  2100

ctctgctcca ttccagtgcc cggaaggagg gggtatcttg ctcccagtaa atttgcaacc  2160

cctctctggc ctgtctgcaa aggctctggc cccagcatcc atccatccac agctggtggc  2220

tgtggccgcc tttggaaggc agtttcccgt gttgtccagg ctggtctcaa actcctgagc  2280
```

tcaagtgatc ctcccgcctc agcttcccaa agtgctagga ttacaagcat gagccaccgt 2340

gcctagctcc agagtgatcg ttctaaacta caaatcagat caggccacct ccctacttaa 2400

gttcctccaa gagttcctcc aacagtttgt ggcctttatc aaagcgttaa gggctgaggc 2460

ctttcacgac ctggttcctg gaggaaacgc catgccgccc ccagcctgga ccacttgcag 2520

ctcccagaca gggagcccct gcttcctctc atcctcaggt agctagtagg agccactctg 2580

tctgccaggg tctctctttc ttccccttct ttgccaggcc aatccagcct gcaggtttaa 2640

gctggacgtg cttcctccag agagccctcc ctgcctcctc cactggaatg gggttcctcc 2700

tctggacttc ccctgcactc tctttcagtc tcttttcttt tctttttctt tttttttttt 2760

tagacggagt ctcactctgt cgcccaggct ggagtgcagt ggcgcgatct cggctcactg 2820

caagctctgc ctcccgggtt catgccattc tcctgcctca gcctcccgag tagctgggac 2880

tacagggacc cgccaccagg cccggctaat tttttttttt ttgtattttt agtagagatg 2940

gggtttcacc atgttagcca ggatgatctc gatctcctga cctcgtgatc cgcctgcctt 3000

ggcctcccaa agtgctggga ttacaggcgt gagtcaccgt gcctggcttc tttcagtctc 3060

ttttctacag actgtgattg cacgtctgac ttgtctcccc agccctgcac agtgcctggc 3120

atgcagaagt gctcagtaag tgtggtgaat gaatgaaggc ttgcctgaat gtgtagtggg 3180

cagttctggg agagggtcca ccgggcctct ggaatctcac cttccactag ggggagctct 3240

caccttgagt ccagccacca ccacgctgga tgctacgaat tcagtttccc tggacacaac 3300

tcaaacctat atcccctttt cttctcagca cagctgaggc aggctggcat ttccagaggg 3360

ctagggtggg aggggggagca gtagggaaat gaacacatac cctgtccggc tcacagagtt 3420

caggtttctc ttctaccacg gttggcccca catggaatcc gaacaggagg aagagacagg 3480

ttcaggacaa aaggctggga tttcagccct tactccctgc ctccaggaaa cttctctcag 3540

aggctttcac ccatcatccc ctcatggact ctgcagccac tttgccaaga gagggtggca 3600

gctgtctcta tgagggccct ttcatcatcc ttacagtgca aacaaaaaca cagccatccc 3660

tcggcatctc tggggggattg gatccaggac ccctagcgaa tagcaaaatc caagcatgct 3720

caaaagtccc ttatataaaa tggtgtagta tttgcctata acctatacac atcctcccat 3780

atactttaaa tcagctctag attactcata atacctggta caatgtaaat gctgtgtaaa 3840

tggttgtaat actgcattat ttaggaataa caagaaaaag gtgtacatgt tcagtgctga 3900

cactactctc cattttcttt ttttctgagt attttttgatc tgcagttggt tgactccacg 3960

gatgcagaac ccatggatgg atacagaggg ttgactgtat aagaagtttt ctataaatgt 4020

ctgctgtgga ctgaactgat ggaataagca tccaaaagga atgccaccgg ctgaaatgct 4080

gaccctcatc accaagataa aacattgcag ggatgcatga aaattacatt tggggagtaa 4140

ataggcagcc caagtacaga gtgaagaaga cctgcttaga ggtggcacac atgaaaacaa 4200

ctcaaagatc tctgtctgga gaactcctgc acatccttca aggcccaggt gaaatgtcgc 4260

ttcagatcct cccaaacaca atgacccact cccgtcctgt gctaccccag cgctttacac 4320

acagctctgc gacagcctgt ggccattttg gaattgggga tacccagcgt tcggaattcc 4380

ttagagctgg gatgctgggt gtggctgtca cagcattgca gtgccagagt ggccaaaaat 4440

gtgttgtaag tgaataaatg aattcctcaa ttc 4473

<210> 605

<211> 3880

<212> DNA

<213> Homo sapiens

<400> 605

agtctacgac gcctccaaag cgctcacctt ccgcatggcc gcgcgcatcc tgctggggtt 60

gcggctggac gaggcgcagt gcgccacgct ggcccggacc ttcgagcagc tcgtggagaa 120

cctcttctca ctgcctctgg acgttccctt cagtggccta cgcaaggtac ggccgccccg 180

gctccagacc ttcctccgag gctccgcggc gcgggcgggc ctcccagacc cagacgggac 240

gccctcggcg caccccgcgc gtccgtcacc tctgctggga acggcggcag ggcccggggg 300

tgggaggctt tgtggcggtg gcgtggcggt gggctctggg cctggcctct gtgctggttc 360

gctggtgtga cctggggctg gccacacgac ctccgtggga cgcgcctgcc gcgacgcgct 420

ccagcctgag caagcgcggg ccgccagagt ttggggtctc ggtggcaggc gtcctgccag 480

tcggtcggac tccttcccac agcggcgccc ctggggccgg cctccatcac ctcttcggaa 540

gcccagatgg ctgcggaacc gaggagagcg tgagggctgc agatgagccc cggtccagcc 600

cagcgccagc cccggaccca ggggtgtggg cgtcagctcc accagccctg gacccgctag 660

gtttcgggat cagagaactg ctgcttctcc agacttcaga acaatgggca ggacccggag 720

agcagctagg atgccccatc ccgcctt ttg gtcccctat tctgggactt cccactgttt 780

gattccctgg ttttcagtca cctgcataaa aataatatgt gtaaaggatc atgctatagg　840

ctgatcaccg tggatacgtt ttctgatcta atcctcgcag cctgcaaagt gttatgattc　900

tcattttatt ggccaaactt attttattga cttacccaag atcacaccgt tagtaggggc　960

acgaacagga ctttaacctc atctcctccg actatggaac tcaagtgctc aattacagtg　1020

ctttccccgg gggaatgctt ttgctgcggc tattccctga actctggaga ggcatcccct　1080

attgcccacg ctcttacaga ggctaatgct tacaaatcca atagtgtcct ctaagtcaga　1140

gctttgctgg gtgcatcaag gtaccccagc ctgagcctag tacagggaaa gggcaatggg　1200

ctgaccctag ccgcactggg ctctgtgcca ggcatggaca tggacagctg tgtgactctg　1260

ggcaattgct tgacctctct gaacttcagc atcctctcct caggatgaca gtaactctgc　1320

tgtggctcag aggggggattg tgataatcaa gacagaatga tgtttgtgga cagtggacat　1380

atccccgacc atttactgag cccagccata tgccaggcca ggagctaagc tgggaagctg　1440

ttaacacaag gatgttggca gagccagtgc tgagaaggtt ttctgggtaa gtggccgggc　1500

ttggcccccct tagccttcct gccccatctt tcttctctcc ctgaacatca gggcatccgg　1560

gcaagggacc agctgcatcg gcacctggag ggggccattt ctgagaagct tcacgaggac　1620

aaggctgcag agccgggtga tgccctcgac ctaatcattc acagtgcaag ggagctgggc　1680

catgagccct ccatgcagga gctgaagggc taccagatcc ccaagggctg gagcgtgatg　1740

tatagcatcc gggacacgca cgagacggct gcggtgtacc gcagccctcc cgaaggcttc　1800

gatccagagc gcttcggcgc agcgcgcgaa gattcccggg gcgcctccag ccgcttccat　1860

tacatcccgt tcggcggcgg tgcgcgcagc tgcctcggcc aggagctggc gcaagccgtg　1920

ctccagctgc tggctgtgga gctagtgcgc accgcgcgct gggaactggc cacacccgcc　1980

ttccccgcca tgcagacggt gcccatcgtg cacccagtgg acgggctgcg gctctttttc　2040

cacccccctca cgccttcggt tgcggggaat gggctatgcc tctgacatgc ttgcgctcta　2100

ggacacggct tggccggtgg ctatggcgcg cacgcagcgc cacccatctg ccgctcccca　2160

ttgtagcgtc gcgcgcccac tctttcactc gttcaacaat ctttcaacaa atgttcgcca　2220

aacgcggatg tgtgccggac tcgaggaagg aggagggcga gccaccgctg ccgcgccaga　2280

gaagcatcta agcccatggg aagatgcctt ctgcgctccg cgcccagagg aaggaaaatg　2340

tcgtgggcca agcaggaatg gagggaatag atagatcccc acgaggtgct gcttggcttc　2400

cccttcccga gccaatccag ggagggtgca tggatggggg aaggcgaggt aggggtggca　2460

ggggagtggg aatattgcaa ctcggggaca ttgcagagac ccgacgcacg cggtgggacc　2520

```
tgcaacccctt gtaaggaagc gggcacgccg tgggcgcaac cctggcctgg ctttgggcca  2580

tagaaaaaac acgcagagga tgcctgacgg aaggccctct ggcagctggc gtctggcttc  2640

gtgcgccttg gccactctgc cggtctcggc ggaaactagc aactgtgggc acttccaggc  2700

tcgaaagggc tcaaggtcac cggattctgc tggccacttc ttaaaaggaa aaattcctac  2760

cttaagaagg catttactct tgtcgtgtat acagaggaga ataggcacac caacacgtct  2820

ccaacgctgg attattttca tgggaggttg agacataatt agagaggttt gagatatttg  2880

taccaaaaat aggaaggcca agaaataaag tgtcttggga gcggttgagt gaggaggcta  2940

gggtttatct gggcagctgc tccctggggg gaaggcactg gggtgcaggg ttggggaggc  3000

tagggaagga cccaccccac agtacaccca gagaggagct gggagctggg cagcctaggg  3060

cctgggctgc ccagacttct ctctgagtat aaccccggaa gctgggctgt gaattgtctc  3120

caggtttcag ggaccttatt tttattttta ttttttgag acagggtctt cctctgtggc  3180

ccaggctgga gtgtagtggc acaaccagct cactgccacc tctgcctctc gtgctcaagc  3240

catcctccca tctcagcctc ccaagtagct gggactacag gcacgtgcca caacgcctag  3300

ctattttttt ttctattttt aatagagacg gggggtttca ccatgtcacc caggctggtc  3360

tcaaactctt gggcttaagc gaaccatctg ccccaacctc tgttcctgtg gccatcaggt  3420

agggctgaac actttggcct ccttttcatg ataagcccta gctagacttg aggactctct  3480

caaccattcc ggtacagagg ttccaaccag tgcttaaatc aaagccaaaa gcctccatgt  3540

catcattccc aacagcccac ttcaatctgc cacccagctt ccaacagacc ggggcagctg  3600

gacataaggg gtgagccagg gaagtagctg cctaggcctg agctgacccc ttagtgaacc  3660

agaagaaagc cagtgccctc ctaactataa gcctctgtag ggatggctcc agtttttaatt  3720

ttccatgggt acatcatgct cagtaatttt gagggatatc ttagctcctg ttttagtagc  3780

tgcagattct ctggggaagg agcagaggag gttccttccc tcctgcactt gatatgctct  3840

ggagggaggc agacaagaaa taaactagca aacaaaaggg                         3880
```

<210> 606

<211> 3721

<212> DNA

<213> Homo sapiens

<400> 606

```
atttccttgt cagctactca gtgcacttct tgcacaggct tttttttttt tttttttcttt   60

gagacggagt cttgctttat cacccaggct ggtgtgcagt ggcgtgatct tggctcactg  120

caacctccgc ctcccgggtt caagcaattc tcctgcctca gcctcctgag tagctgggat  180

tacaggcgcc tgccacctcg cccagctatt tttgtatatt tagcagagac agagttttac  240

catgttggcc aggctggtct caaactccca acctcaggtg atctgcctgc ctcggcctcc  300

caaagtgctg ggattacagg cgtgagccac catacccggc cacgtttggt ttcactttag  360

cctagaaacc tgctcgcggc tgactggggg gtgctctgtg gtcccatctt cctaacacag  420

ctctgtcttc tctgtggggt ggcagctgct gcgtttgttt gcctgctttt gtgtgtccag  480

gtcgacccca cctggatccg atcatccaca accgcaggtt gctggaacct cccagtgcag  540

cctggcctgg gggcagaggc cgggcccagc tgtccctcgg ggttcactgt gctgactccc  600

tgcttctggg cctgcctttc tctttcttgg ttttctttat aatttttgtgg tttggagaag  660

tcctgcctcc cgtcgtttcc tgggccggtc ccgggaggta gcacgttgag gcctttcatg  720

tctgaaatgt ctgtcgcttc cctccgccgg aggggcagcc tggcctccgt ggtgtcacag  780

gtgcagagcc tgcccttgaa cgtccctgcc gcttttgcgt gactgatcct ctgtgtgccg  840

tcagctttgc ttgaggtttt agggtctttg ctccctccca gctgtacctg gctgtgctgg  900

gggccttttt aggctttggg cttgtgtcct tcatcgtggg gtcatcctct cgtgctcttt  960

gttaacttcc ccatcatcat cccttctgt tgctcctgtt aatcagatgt tgatcctccc  1020

agatgagggc gtcttttttt tttttttga dacagtttca ctcttgtcgc ccaggctgga  1080

gtgtagtggc gtggtcttgg ctcactgcaa cctctgtctc ccaggttcaa gtgattttcc  1140

tgtctcagcc ttctgagtag ctgggattac aggtgcacac caccacgccc agctaatttt  1200

ttgtattttt ttagtaggga tggggtttca ccatgttggc caggctggtc ttgaactcct  1260

gacctcgtga tccgcctgcc tcggcctccc aaagtgctgg gattacaggc gtgagccacc  1320

gtgcgcagcc ccttgctgga tattttcatc cgtgtggaag gggataaagc gtgccccatg  1380

gtcacaccac cccctcccgt ggcctggcgt ccccaccttc gtcctgacct cttctgtctc  1440

gtggtcccca ggctcctgtg ctgctgtgcc cctcagggtc ctcctgcctc ccgagcctcc  1500

ctgctccaca tggcccctgc ccagccctct ccatccctct tgaaggtagt tccacagcca  1560

gacaccctcc cgccccccgc tggcctctcc tctagggctt gctacccacc cccatcccct  1620
```

gcttccactg ccacccgatg tgtccacgat gccccaggcc acctccccac ctctgtggcc　1680

cctgagcctg cacggaggaa agggtatcct ctgggcaagg cacagccacc cgccaggtcc　1740

tccctctcac cacatccagg acagtggacg ctgctccctg cctcttcctc agagtcctgg　1800

ggtcacacct ctacctgcgc ggctctcggg ggccacccct ctcagcccca tccggctcct　1860

gagcagcttt gtccccagag ggccccgggt cattcctctg accaaccagg cacggcgcac　1920

cctgcatgca agcctgggcg ggtgctgggg acggacgagt gacgcagcag acactgcctc　1980

cctgaaggca tggcaaggag gccccgagtt cctgaagacg cccctggggg gcagcttcct　2040

ggtgtacgag tccttcctct accgtcggga gaaggcggcc ggggagaagg tgtattggac　2100

ctgccgggac caggcccgca tgggctgccg cagccgcgcc atcacccagg gccggcgggt　2160

catggtcatg cgcaggcact gccacccacc ggacctgggc ggcctggagg ccctgcggca　2220

gcgggagcac ttccccaacc tggcgcagtg ggacagccca gatcctctcc ggcccctgga　2280

gttcctgagg acttccctgg ggggcaggtt cctggtgcac gagtccttcc tctacaggaa　2340

ggagaaggcg gctgggggaga aggtgtactg gatgtgccgg gaccaggctc ggctgggctg　2400

ccgcagccgc gccataaccc agggccaccg catcatggtc atgcgcagcc actgccatca　2460

gcctgacctg gcaggcctgg aggccttgag gcaacgggag cggctccccca ccacggccca　2520

gcaggaggac ccagaaaaga ttcaagttca gctgtgcttc aagacgtgtt ctcctgaaag　2580

ccagcagatt tatggggaca tcaaagacgt cagactggat ggcgagtccc agtgaggcga　2640

tgtgggcaga ggagctccga gccgcccacc cgaggtggct tcacatccac acaggcactt　2700

cccatccacc taggtttggc ttagcagaaa cttctttttca ttcttccaaa gcatcgatgg　2760

tcttcgcgtc tcctcaggag gtctcccagg aggaattctt ggatggtgtc ctcatgtcgg　2820

cggagaacag tgctcagagc tggcgcttgc agacgcagct gtcgtggggc agggcggtgg　2880

cgccttcctg acctttggaa gacatgacaa agctgcctgg acacggacgc ccctgctgta　2940

cggccacagc acccctgggt ttgcagagca cgcagccttc ctagggcttt ccacctggcg　3000

aggccccgct ctgctcagca cggtgcaaag tgaatgctgc tgtcttggag cctgggcacg　3060

tttggggaag ttcctgcttc aaactgagct gccccgcata ggccaggtca acccacacca　3120

atctcttctg gacaggtgct gggtaggcct tcctggtctc tggccgcctg ctgccagggt　3180

gtggccatcc ccagcaaccg gagctggcca aaccagaggc ctcgctccgc actccacact　3240

ttcctttctg tgctccttcc aagttaaatt aaaccccctc tccacgattc ccacggcagg　3300

cgtcattccc gagatgggag ccagtccagg ggtcagcagg agccagcgct gggcacacgt　3360

gccctggctg aggccagcgg catcctgggt ggcccaggtc catcctgggc agcaaaggcg　3420

tgtccccttc tgtcagacag cttcacagag tgtggcttca ccagtcagag ggagcagtcc　3480

ggagaggcaa gatgacccca ccgggactgc agagcctcct ccttactaac aaggacctgt　3540

ccgcagccgc gaggtccttc actcccaccc tgtaattgtg gggggagtgc cagcaacagg　3600

ccagtcccct ggcaagttgg ccacggaacc caccatgcac tgcaaggctg tgacagcctg　3660

ggcacccctg cttctcctct gcttgtacgg ttcccccaat aaatcctatt ttccatctca　3720

c　3721

<210> 607

<211> 3706

<212> DNA

<213> Homo sapiens

<400> 607

gtccctcact gtctcccacc caccccacac agtcatgtgc ccctgcccca cagccccaca　60

cgtcgagcca tacccctca gctgccactg ccaccaggcc ggtgctgagc tggggggtcag　120

tgactcatct aatcccttag gcaggtgccc tgcaccccca accccaccct gtcaccccct　180

cagcagtaaa ggcctgaggc tcgaggcccc agaggagctt tggacctgtt gggtatcttg　240

aggtgtggga ttaacgcact gagattgggc agagataagg gtttcagggg acaaaaagaa　300

acatttgttt gaaacatgcc agagtgtctc caccccgcat caggacagac tgacagagtg　360

ggctggggac aggctacccc atatcccttc tggctccctg agcgcccccт gccctctgac　420

ctgggcctcc agatcacagc cttgtccact caccagagcc ctggcaccac ggccacacca　480

tgcccggcca gtgccctgcc caaccctgct cccttccaga ttcccaccca ggcagccatt　540

ctcaggtaca caatgtgcag gactcactgt gacctgccca ccaggccccc ccgaggcaga　600

ccctgcagag gcaccaagca ttttgaggct cggaggtgag ggtgagcttc tgggtggcct　660

tcccggagaa gggggcttag ggctgtgcct gagctcaagg taggggggat tccaacatcc　720

cagaggggct gcagaaggcc gaagaggcag gatgggtgag ctgcaggccc cctcgcccag　780

aggcccgtca gaactaccct cagctgccag gcatccggcc ccaccccgga ggaaaggcaa　840

cggatggctg gggttggggtg gagggagcca ggccagagcg ctgcagggtg caacttgatc   900

agaagcctgt cacagtgggt gcagtcccag gccagccgcc ccagggcacc tcaggggcgt   960

aaagcctaca gaggagccac ctcagctctg ccctgctccc gtgtccggag gagatgccat   1020

cttgctgcat gatgcttcgg gctctgctga tcagttccct ccttgccctg ctctgggcat   1080

ccccaggcca ggcccaggtc cccatccagg ccaactttga tgccagccag gtgtgcccag   1140

ccctgtttcc tcctcatctc caatgagtcc tcccggcttt ggtgctgcac cccgggtccc   1200

tgtccacacc ctctttgatc caggctcagc agggctaggg gcaggggaaa ccccacctc   1260

acccgctccg tctgactgga gtaggggttg gctggggaag actgcagcct ccatcctacc   1320

ttttcagttg catcccccaa cactccccag ggcccaaaat agggacaagt tggttgcctg   1380

tgcctcactg tcccccaccc accccacaaa gacctgtgac cttgccacag ccccacccat   1440

ccagccgtac cccctgggtg ccagctgcag acaggccggt gctgggctgg tgggggccag   1500

ttgctcatgt actgaggccc ccctccctca gttctgcatc ggggtcgaga tgtgtacagc   1560

agcccctgcc gtggccagga agcagctgtg tcggggcaga atgtggtggg ctcaggccca   1620

gggcacaggg gcggcctccc agccttccct gcacttgccc tgcagttcca gggcacctgg   1680

tacatggtcg gggtggtgtc agatgaccag gacttcctgg actccaagga caccatgaag   1740

atggctgtgg tcttagtgac ccccttgggg aatggtgacc tggccctcaa gtttggatac   1800

cccacgtaag tgaccacacg agcccatcag actcagcctc agaggatggc cagcatgagg   1860

ccacatgaag gtccagaggg accatggtgt ccccagcaca ttgaggtcag accacgggtc   1920

ctcgacggct ctgtgcggca gagccccaga tggcagccac atggagtcca gagggaccca   1980

ggccctggag gaagcactgc ctgaggcctg gtgttgagaa aagtgtctgc atgtctgtgt   2040

ctgtgtgtgt atcactgtat gtggctgtgt ctctgtgtat gtgtgtctat ttctgcatgt   2100

gtgtgtgtct gtgtgtgcgt gtgtatgcat gtgtgtcttt gtagatgtgt acctctgagt   2160

gtgtatgtgt gtatcactgt atgcgtctgt gtgtctgtgt gtctgtgtat ctgtgtctgg   2220

ctgtgtgtgt ctatctctgt gtgtgtcttg tgtgcgtgtc tatgtgtgtg tctgtcagtg   2280

tgtctgtgtc tgtgtctatc tccgtgtgtg tgcatgtgtg tatgtgtgtg tcttctgtgt   2340

gtctgtgtct ggaaggggga cctggaggcc ctgcattcta ggctgtgtgc ctgtgaacag   2400

gtacttaata cccaccccac ccccagcagg agtgtcccca cctctaaggt catcctaaag   2460

tcccatgtcc tccaaggatt gtgagggtga acaggggacc ctgggctcag agacagcaag   2520

gtaggctcta ggcctgggcg ctgggcaggg gtggccactc aggggattgg ggctctttct   2580

ccccaggccc catggcgggt gccagaaaat ggacacgacc ttcaccgagg gtgctgtacc 2640

ggggcagttc agcaacccag ccatggccct gagtgacatc cgagtggcct tctccgacta 2700

ccagcacttt gccttgctgt acttggagat gcggaaaggg ggcctgcgga accagtggct 2760

gcagctctac ggtgggcggg ctgcggggcg gagacccagg cacccccgct tcgggtctgg 2820

gatgtcaccc ctgtgcctgc accagccctt tctgcacgcg gaaggtggaa ccgctggctc 2880

ctggtgtctg tggccgcggg tcccggcccc tccctgcccc tctctccctc tcttcgcccc 2940

tccagcccct tccctttagc ttacccgccc tccccacctt cagctcgagc gcccgagctg 3000

tttcccgaag gcgcccagaa gatgcagcta ctggcgcccc aagtgggcct gagccccagc 3060

cagggcgtcc tgctgccgaa gtcgggtgag cggtgccggc agccctgctg ggagggccag 3120

gccccgggtc acacccctgc tggaagggcc aggccctggt cactccactg atctcagatt 3180

cgggacagaa gtgcccgggg cagacccagc ctgtctgggt cgggggaggg cgagacgttg 3240

cccaggccgg tgttcctagg aggagatcgc cttggggcag gtcggggggcc tccgtcccag 3300

ggaagggggc gcggggtggc gcctcaggct cgatctctct gcagaccagt gtgcgggcgc 3360

gctctcccgg gtgagtagac catggccatg cggagccgcg gaccatgggc cctcccagct 3420

cggtgggctg caccgcgggg ccctctacct tcggggcagc tagggacgac agcggggggtg 3480

atggggcacc cgggcggatc cgagccgcag cagcctgggg aaccgcgggg ctgcgcgtcg 3540

ggaggggggcg gaggcagggg acgccgccca cctgctcctt gttttgcagt gaggggtcca 3600

gcccctgagt gcccgcaggg gtcagctgct ccgtgcgccc agccctgccc aaagagcccc 3660

ctccctccac accctggccc caagcgcaat aaacaccctg aatgcc 3706

<210> 608

<211> 4417

<212> DNA

<213> Homo sapiens

<400> 608

attcagaccc tgctctttcc ttccattctc ctccttggcc cagtaccctt gtgcaggtta 60

caatttgcct gtcatatgtg gctgcctgat tttagataga agatgtatct cctctgtttc 120

ggtgatatct gttgtatgta gacctcttgt ttcccaccag tatctgaatg gtattatatg   180

atagagcaga agagaaatgt atttgaatta aaaccctaga gacaaatatg aataagatga   240

ggcaattaag atgttttcaa catttggtga agtcttaaaa aagacctact ggagcataga   300

atatttgctg aagttgtata atggaaggag aaatagattt tgatttttag gacattatac   360

ctggaatggt ttagataact tattattttt aaagtcatcc aaatgcaatg taaatatgta   420

aggttttgtg ggcaaatgga gcctctgtgt aaaacaggaa aaggcactct ttcctctggg   480

caagtacagt cccacagtgg gatgaaccgc tcgccgagag acaagggaca catgggattt   540

aaaacttcct tggataaaga tattcattaa ttcgttcatt cattcattca tgtttgctgg   600

aaaaaaaact cttctggatt ttatctattc tttagttagg tgagctttcg atattgtaac   660

actctgagtt tgctttaaga ccctcaggca gtttgattgc atctacacaa gataaaccca   720

accagcagga tattgtgttt tttgagaaaa atggactcct tcatggacac tttacacttc   780

ccttccttaa agatgaggtt aaggtaaatg acttgctctg gaatgcagat tcctctgtgc   840

ttgcagtctg gctggaagac cttcagagag aagaaagctc cattccgaaa acctgtgttc   900

agctctggac tgttggaaac tatcactggt atctcaagca aagtttatcc ttcagcacct   960

gtgggaagag caagattgtg tctctgatgt gggaccctgt gaccccatac cggctgcatg   1020

ttctctgtca gggctggcat tacctcgcct atgattggca ctggacgact gaccggagcg   1080

tgggagataa ttcaagtgac ttgtccaatg tggctgtcat tgatggaaac agggtgttgg   1140

tgacagtctt ccggcagact gtggttccgc ctcccatgtg cacctaccaa ctgctgttcc   1200

cacaccctgt gaatcaagtc acattcttag cacaccctca aaagagtaat gaccttgctg   1260

ttctagatgc cagtaaccag atttctgttt ataaatgtgg tgattgtcca agtgctgacc   1320

ctacagtgaa actgggagct gtgggtggaa gtggatttaa agtttgcctt agaactcctc   1380

atttggaaaa gagatacaaa atccagtttg agaataatga agatcaagat gtaaacccgc   1440

tgaaactagg ccttctcact tggattgaag aagacgtctt cctggctgta agccacagtg   1500

agttcagccc ccggtctgtc attcaccatt tgactgcagc ttcttctgag atggatgaag   1560

agcatggaca gctcaatgtc agttcatctg cagcggtgga tggggtcata atcagtctat   1620

gttgcaattc caagaccaag tcagtagtat tacagctggc tgatggccag atatttaagt   1680

acctttggga gtcaccttct ctggctatta aaccatggaa gaactctggt ggatttcctg   1740

ttcggtttcc ttatccatgc acccagaccg aattggccat gattggagaa gaggaatgtg   1800

tccttggtct gactgacagg tgtcgctttt tcatcaatga cattgaggtt gcgtcaaata   1860

tcacgtcatt tgcagtatat gatgagtttt tattgttgac aacccattcc catacctgcc 1920

agtgtttttg cctgagggat gcttcattta aaacattaca ggccggcctg agcagcaatc 1980

atgtgtccca tggggaagtt ctgcggaaag tggagagggg ttcacggatt gtcactgttg 2040

tgccccagga cacaaagctt gtattacaga tgccaagggg aaacttagaa gttgttcatc 2100

atcgagccct ggttttagct cagattcgga agtggttgga caaacttatg tttaaagagg 2160

catttgaatg catgagaaag ctgagaatca atctcaatct gatttatgat cataacccta 2220

aggtgtttct tggaaatgtg gaaaccttca ttaaacagat agattctgtg aatcatatta 2280

acttgttttt tacagaattg aaagaagaag atgtcacgaa gaccatgtac cctgcaccag 2340

ttaccagcag tgtctacctg tccagggatc ctgacgggaa taaaatagac cttgtctgcg 2400

atgctatgag agcagtcatg gagagcataa atcctcataa atactgccta tccatactta 2460

catctcatgt aaagaagaca accccagaac tggaaattgt actgcaaaaa gtacacgagc 2520

ttcaaggaaa tgctccctct gatcctgatg ctgtgagtgc tgaagaggcc ttgaaatatt 2580

tgctgcatct ggtagatgtt aatgaattat atgatcattc tcttggcacc tatgactttg 2640

atttggtcct catggtagct gagaagtcac agaaggatcc caaagaatat cttccatttc 2700

ttaatacact taagaaaatg gaaactaatt atcagcggtt tactatagac aaatacttga 2760

aacgatatga aaaagccatt ggccacctca gcaaatgtgg acctgagtac ttcccagaat 2820

gcttaaactt gataaaagat aaaaacttgt ataacgaagc tctgaagtta tattcaccaa 2880

gctcacaaca gtaccaggat atcagcattg cttatgggga gcacctgatg caggagcaca 2940

tgtatgagcc agcgggggctc atgtttgccc gttgcggtgc ccacgagaaa gctctctcag 3000

cctttctcac atgtggcaac tggaagcaag ccctctgtgt ggcagcccag cttaacttta 3060

ccaaagacca gctggagggc ctcggcagaa ctctggcagg aaagctggtt gagcagagga 3120

agcacattga tgcggccatg gttttggaag agtgtgccca ggattatgaa gaagctgtgc 3180

tcttgctgtt agaaggagct gcctgggaag aagctttgag gctggtatac aaatataaca 3240

gactggatat tatagaaacc aacgtaaagc cttccatttt agaagcccag aaaaattata 3300

tggcatttct ggactctcag acagccacat tcagtcgcca caagaaacgt ttattggtag 3360

ttcgagagct caaggagcaa gcccagcatg caggtctgga tgatgaggta ccccacgggc 3420

aagagtcaga cctcttctct gaaactagca gtgtcgtgag tggcagtgag atgagtggca 3480

aatactccca tagtaactcc aggatatcag cgagatcatc caagaatcgc cgaaaagcgg 3540

agcggaagaa gcacagcctc aaagaaggca gtccgctgga ggacctggcc ctcctggagg 3600

```
cactgagtga agtggtgcag aacactgaaa acctgaaaga tgaagtatac catattttaa    3660

aggtactctt tctctttgag tttgatgaac aaggaaggga attacagaag gcctttgaag    3720

atacgctgca gttgatggaa aggtcacttc cagaaatttg gactcttact taccagcaga    3780

attcagctac cccggttcta ggtcccaatt ctactgcaaa tagtatcatg gcatcttatc    3840

agcaacagaa gacttcggtt cctgttcttg atgctgagct ttttatacca ccaaagatca    3900

acagaagaac ccagtggaag ctgagcctgc tagactgagt gactgcagtt aggagggatc    3960

cgacagagaa gaccatttcc actcattcct gttgtcctac caccccttgc tctttgaggg    4020

ctggctattg agaactggaa agagtaaaat gataacttac cttagcattg ccaagaactt    4080

cagcagacaa caagcaattc tatttatttt atgttgtgta tacatcttga tcattagcga    4140

gacattaagc tttaaccatt atggcaccat tttgtgagaa tgattgttct ttcacttggg    4200

ctgtttgaga gcataattat ggtaatcatg agattaatgt ttcatgattt ctacctccaa    4260

agtgtgaaga caagtaaaac aatgtttcta aattgtctta ttttgttggc ggagaagatt    4320

acaatggcta ttagtgctac atttggtcaa atgtaatcac ttaaatagct tcttgtcacc    4380

ttaaactaaa gcagaataaa aagtatcctt tgaaatt                              4417
```

<210> 609

<211> 4074

<212> DNA

<213> Homo sapiens

<400> 609

```
cctgtctcct tttttcttgt taattctgat gaagggctgt gaagggctgg ctgcttgcct     60

gacttgaaga aggtgcattc cctctgccat gcaggtgaac acacgagact cagaatggct    120

ggggggtgttc ccaaggtcac atcctggctg tcagcacatt gagggctcag accaagttct    180

ttgtgactcc aaaatcagtc cttttcatga cttgctgaca aacctaaaga taaaagttag    240

ggccttcttt attctttccc ttgactgcct ttgccagcca atgacggaca acctctgacg    300

gctgggatgg aggcacccgc aggccagccg gagtcttctc cggtacttac cagtcagagt    360

ggtgagactc acagacgctc tctcagaaac tggcagctta cactcaacac ccggtgccta    420
```

gttccccacc ctgtctcctc taactcctca cctgcctcct gcctgtctcc tccttccagt　480

tctgtctcct tctagttctg tctcctcctt ccagttctgt cctcagaaaa ttagacggtt　540

ttgggtgagc cagcaaggag gcaggagtga gtcagcgtgc gtctgttaac acgctgggct　600

tagtggttct agggacctac agaggctcca gggtgggcgg cagtgggacc tggcgcctgc　660

gctttctgtt atttacacat ggctgtggtg acgcccaagg ggcttgcagt actcagcagg　720

gcactgaggg cgaagctgtc ttctcccctg gtgacacccc tcggggggtct tttgtggtct　780

gggtagctgt gtggagctga accggtctgc attcctggaa ccagagggat tatccaagac　840

caggaagtcg gtgtttatta ctaggaagct gacggtgtca gtcggggaaa ttgtgaacgg　900

agggccattg cccccccgtcc ctcgtcatac ccctgtgtgc agcttcaact cccagaacaa　960

gtacatcggg gagagcctgg ccgcggagct gcccgtcagc acccagagac ccggctctga　1020

cacagtgggc ggagggagag gagaggagtg tggtgtagag ccggatgcac ccctgtccag　1080

tctcccacag tctctaccag cccctgcgcc ctcaccagtg cctctgcctc ctgtcctggc　1140

actgaccccg tctgtggcgc ccagcctctt ccagctgtct gtgcagcctg aaccaccgcc　1200

tccagagccc gtgcccatgt actctgacga ggacctggcg caggtggtgg acgagctcat　1260

ccaggaggcc ctgcagaggg actgtgagga agttggctct gcgggtgctg cctacgcagc　1320

tgccgccctg ggtgtttcta atgctgctat ggaggatttg ttaacagctg caaccacggg　1380

cattttgagg cacattgcag ctgaagaagt gtctaaggaa agagagcgaa gggagcagga　1440

gaggcagcgg gctgaagagg aaaggttgaa acaagagaga gagctggtgt taagtgagct　1500

gagccagggc ctggccgtgg agctgatgga acgcgtgatg atggagtttg tgagggaaac　1560

ctgctcccag gagttgaaga atgcagtaga gacagaccag agggtccgtg tggcccgttg　1620

ctgtgaggat gtctgtgccc acttagtgga cttgtttctc gtggaggaaa tcttccagac　1680

tgcaaaggag accctccagg agcttcagtg cttctgcaag tatctacagc ggtggaggga　1740

agctgtcaca gcccgcaaga aactgaggcg ccaaatgcgg gctttccctg ctgcgccctg　1800

ctgcgtggac gtgagcgacc ggctgagggc gctggcgccc agcgcagagt gccccattgc　1860

tgaagagagc ctggccaggg gcctcctgga cctgggccat gcagggagat tgggcatctc　1920

ctgcaccagg ttaaggcggc tcagaaacaa gacagctcac cagatgaagg ttcagcactt　1980

ctaccagcag ctgctgagtg atgtggcatg ggcgtctctg gacctgccat ccctcgtggc　2040

tgagcacctc cctgggaggc aggagcatgt gttttggaag ctggtgctgg tgttgccgga　2100

tgtagaggag cagtccccag agagttgtgg cagaattcta gcaaattggt taaaagtcaa　2160

```
gttcatggga gatgaaggct cagtggatga cacatccagc gatgctggtg ggattcagac  2220

gctttcgctt ttcaactcac ttagcagcaa aggggatcag atgatttctg ttaacgtgtg  2280

tataaaggtg gcccatggcg ccctcagtga tggtgccatt gatgctgtgg agacacagaa  2340

ggacctcctg ggagccagtg ggctcatgct gctgcttccc cccaaaatga agagtgagga  2400

catggcagag gaggacgtgt actggctgtc ggccttgctg cagctcaagc agctcctgca  2460

ggctaagccc ttccagcctg cgcttcctct ggtggttctt gtgcctagcc caggagggga  2520

cgccgttgag aaggaagtag aagatggtct gatgctacag gacttggttt cagctaagct  2580

gatttcagat tacactgtta ccgagatccc tgataccatt aatgatctac aaggttcaac  2640

taaggttttg caagcagtgc agtggctggt ttcccactgc ccccattccc ttgacctctg  2700

ctgccagact ctcattcagt acgtcgaaga cgggattggc catgagttta gtggccgctt  2760

tttccatgac agaagagaga ggcgtctggg cggtcttgct tctcaggagc ctggcgccat  2820

cattgagctg tttaacagtg tgctgcagtt cctggcttct gtggtgtcct ctgaacagct  2880

gtgtgacctg tcctggcctg tcactgagtt tgctgaggca gggggcagcc ggctgcttcc  2940

tcacctgcac tggaatgccc cagagcacct ggcctggctg aagcaggctg tgctcgggtt  3000

ccagcttccg cagatggacc ttccacccct gggggccccc tggctccccg tgtgctccat  3060

ggttgtccag tacgcctccc agatccccag ctcacgccag acacagcctg tcctccagtc  3120

ccaggtggag aacctgctcc acagaaccta ctgtaggtgg aagagcaaga gtccctcccc  3180

agtccatggg gcaggcccct ctgtcatgga gatcccatgg gatgatctta tcgccttgtg  3240

tatcaaccac aagctgagag actggacgcc cccccggctt cctgttacat cagaggcgct  3300

gagtgaagat ggtcagatat gtgtgtattt ttttaaaaac gatttgaaaa aatatgatgt  3360

tcctttgtcg tgggaacaag ccaggttgca gacgcagaag gagctacagc tgagagaggg  3420

acgtttggca ataaagcctt ttcatccttc tgcaaacaat tttcccatac cattgcttca  3480

catgcaccgt aactggaaga ggagcacaga gtgtgctcaa gagggagga ttcccagcac  3540

agaggatctg atgcgaggag cttctgctga ggagctcttg gcgcagtgtt tgtcgagcag  3600

tctgctgctg gagaaagaag agaacaagag gtttgaagat cagcttcagc aatggttgtc  3660

tgaagactca ggagcattta cggatttaac ttcccttccc ctctatcttc ctcagactct  3720

agtgtctctt tctcacacta ttgaacctgt gatgaaaaca tctgtaacta ctagcccaca  3780

gagtgacatg atgagggagc aactgcagct gtcagaggcg acaggaacgt gtctaggcga  3840

acgactaaag cacctggaaa ggctgatccg gagttcaagg gaagaggaag ttgcctctga  3900
```

gctccatctc tctgcgctgc tagacatggt ggacatttga gcagcctgac ctgtggggag 3960

ggggtctctc ccgaagagtt tctgttttta ctcaaaataa tgttattctc agatgcttga 4020

tgcactgttg gaaatgtgat taatttaatc atgcagataa accatttaaa tgtc 4074

<210> 610

<211> 4152

<212> DNA

<213> Homo sapiens

<400> 610

tgcaagaatg agttaatctc agtgaagatg gcagaagctg gctccgagtt ggaaggcgtg 60

tctttggtga caggtcagcg gggcctggta ctggtgtcag ccttggagcc tctgcctctc 120

cctttccacc agtggttcct aaagaattat ccaggaagct gtggcctttc caggaagagg 180

gattggacag gctcctatca gattggcaga ggacgctgta aggccttgac gggttatgag 240

ccaggagaaa aggatgaact gaatttctac cagggagaaa gcattgagat catcggcttt 300

gtcatacctg ggcttcagtg gttcattgga aagtcgacaa gttcaggaca agtgggcttt 360

gtccccacca ggaacataga tcctgattct tattccccaa tgacttggtt gtttcttcaa 420

tatgaagatt catgtctttc ttcaattctg gaaaattttc agtccttctt cctttgaata 480

ttgcctctct ctcgttcttt ttagtctctc ttctggaatt cctattagag gagcaggaac 540

tctgcctttc tcagtgatga ggagagatgc tccctgttgg ccctgggaag tgataagcag 600

actgagtgtt ccagcttcct ccacactctt gctcgcactg acatcacatc tgcctaccgg 660

ctcagtgggt ttgaatccat ccagaatcct ccaaatgatc tgagtgcatc ccagcctgaa 720

ggcttcaagg aggtcaggcc tggcagagcc tgggaggagc atcaggccgt ggggtccaga 780

cagtccagca gctctgagga ctccagcctg gaggaggagc tcctctcggc cacctcagac 840

agctatcgcc tgccggagcc tgatgacctt gatgacccgg aactgctcat ggacctaagc 900

actggtcagg aggaggaggc tgagaacttc gcccccatat tggctttтct ggatcatgag 960

ggttatgctg accactttaa gagtctctat gacttctcct tctctttcct cacttcttcc 1020

ttttatagct tctctgagga ggatgagttt gtggcctacc tggaggcatc aagaaagtgg 1080

gccaagaaga gccacatgac ctgggcccat gcccggctct gcttcctcct gggccggctg 1140

agcatcagga aggtcaaact ctctcaggcc agggtgtact tcgaggaggc catccacatt 1200

ctcaatggag catttgagga cctatccttg gtggccactc tgtacatcaa tttggctgcc 1260

atctacctga aacagaggct gagacataaa ggctccgccc tgttggaaaa ggcaggtgcc 1320

ctgctggcct gcctgcctga ccgtgagtct agtgccaagc atgaactcga cgtggtggcc 1380

tacgtgctgc gccaggggat tgtggtgggc agcagcccgc tggaggccag ggcctgcttt 1440

ctggccatcc gcttgctcct gagcctaggc cggcacgagg aggtcctgcc ctttgccgag 1500

cgcctgcagc tcctctctgg acaccctcct gcctctgagg ctgtggccag tgttttgagt 1560

tttctgtatg acaagaaata tcttccacac cttgcagtgg cctctgtcca gcaacatggt 1620

atccagagtg cccaagggat gtctctttct atttggcagg tccaccttgt cctccagaac 1680

acaaccaagc tccttggctt tccttcccca ggctggggtg aagtttctgc cttggcctgc 1740

ccaatgctca gacaggccct ggctgcctgt gaggaactag cagaccggag cacccagagg 1800

gccctgtgtc tcatcctttc caaagtgtac ctcgagcaca ggtctcctga cggtgccatc 1860

cactacctga gccaggcctt ggtgctaggg cagctgctgg gtgagcagga atcctttgag 1920

tcttctctct gcctggcatg ggcctatctc ttagccagcc aggccaagaa ggctttggat 1980

gtgcttgagc cactgctatg ctccctgaag gagacagaga gtctcactca aaggggagtc 2040

atctataacc tcctgggact tgcactccaa ggtgaaggcc gggtgaacag ggcagccaag 2100

agctatcttc gggccttgaa cagagcccag gaggtgggag atgtgcataa ccaggcagtg 2160

gctatggcca atcttggcca cctgagcctt aagtcctggg ctcagcatcc agccagaaac 2220

tatctcctgc aggctgtacg actctattgt gaacttcagg ccagtaagga gacagacatg 2280

gaattagtac aggtgtttct ctggttggcc caagttctgg tgtctggaca ccagctgacc 2340

catggccttc tttgttatga aatggcattg ctgtttggct taaggcatcg acatctaaag 2400

agtcagcttc aggccaccaa atccctctgc catttctaca gctctgtgtc cccaaaccct 2460

gaggcatgca tcacctacca tgagcactgg ctggccctgg ctcagcaact cagggaccgg 2520

gagatggaag ggaggctgct ggagtccctg gggcagcttt atcggaacct aaacaccgcc 2580

aggtccctca ggaggtcact cacatgcatc aaggagagcc tgcgtatctt cattgacctg 2640

ggggagacag acaaggctgc tgaggcctgg cttggggcgg ggcgactcca ctacctcatg 2700

caggaagacg agctggtgga gctgtgcctg caggcagcca tccagacagc cctgaagtca 2760

gaggagcctt tgctggctct caaactttat gaagaagcag gtgatgtgtt cttcaatggg 2820

● acccgccaca ggcatcatgc agtggagtac taccgagctg gagctgttcc tttagcaagg 2880

aggttgaagg cggtgagaac tgagctccgg attttcaata agctgacaga gctgcagatt 2940

agcctcgaag gctatgagaa ggctttggaa tttgccaccc tggccgccag gctcagcaca 3000

gtcacagagg caagagctgg tggcctttca ccgcctggct acagtgtact actccctgca 3060

catgtatgag atggctgagg actgctacct gaagaccctg tccctctgtc caccatggct 3120

gcagagtccc aaggaggccc tgtactatgc caaggtgtat tatcgcctgg gcagactcac 3180

cttctgccag ctgaaggatg cccatgatgc cactgagtac ttccttctgg ccctggcagc 3240

agcagtcctg ctgggtgatg aggagcttca ggacaccatt aggagcaggc tggacaacat 3300

ctgccagagc cccctgtggc acagcaggcc ctccgggtgc tcctcagaga gggcgcggtg 3360

● gctgagtggt ggtggcctgg ccctctgagg aaagctgtcc tgtctctgga catttggcat 3420

ggccagactc tgaccccact gccctaggct cttaaatact cattgggagg gtccgagtcc 3480

ttacctggcc tagccccctc atttcacaag aagaagaatg aagtccagga ggagaagggc 3540

tcattgcagg ccacagaaag atttgatggt gcagcgatga gaattcctgg ttccaggctt 3600

tgcatctgga gcctttaccg gttgactgtt gccttccaca caaacagcct ctgaaaagca 3660

ctttctccat acataattct ggagaagatg agggatcttg ccctccagga gccttccttc 3720

ctcccccaat gaggaaatca gtcactgcac tggtgcaaag gcaagcagat tggaatttgt 3780

gctcttcacc gattttctca gggaaagacc ccttcccctt gccagcagag gaacctgtag 3840

ttttttccat ttctttcttc agaaccaaag tatgtatcac tcctcatgct cacagggatt 3900

gacaggagag aattcaccag gatcttagct caaaagacac agcctcagaa tggccagatg 3960

● gattgcacga aacctgactt ggattcacca tcttcctcct gccataaggc tgtgctccca 4020

cataacctcc cagaagctcc agggaagctt tccaagagca aaggcttgga aattgaatgt 4080

taagaaaatt atgacataaa ttacatgtaa atagtgtata tgattaaata ttgtccagtt 4140

acatttacac ac 4152

<210> 611

<211> 5259

<212> DNA

<213> Homo sapiens

<400> 611

tttttttttc	tcgctcgctc	ccgttccccg	gacgcggcgg	atgagccggc	cccgctgggg	60
aaggctccgg	gcggcggcgg	gcggccggga	ggaggctgcg	tgctcggggc	tggggctgcg	120
agcggggtga	ttttgtatta	aaatgaggag	gaggaagaag	aggcacccac	agcggcagcg	180
gcggcggcgg	cggcagcagc	agcaggagca	gcggcggaga	gggctgcagc	ccgggcggac	240
gcgcggagcc	gagcggggca	cggcggcggc	agcgacagcg	gccgggatga	gtcaactaat	300
aatttaatgg	gggcagagac	ggcagcgagg	ggtagagcta	gcgagggaga	gagcgagaga	360
agcagccccg	tccgggggact	cgcgctcaca	ctcacgcaca	cacacaaaca	cacacacacc	420
tctccctgtg	ccacccagca	acacccggcc	tcgtcacaac	aacaacagcc	gcggccgccc	480
tctatcctgc	ccggggggccc	agccgaaagc	cagggcgact	ctagaggacg	ctgcccgccc	540
ccctctttca	tttcgggaaa	ctcctgatca	gttttgtcgg	ggtttctggg	tttctttcc	600
cccaaagtcc	tagtgccatt	gtggtgctcg	ttgtttacct	cggactctgg	acgagtgaga	660
gcttggcgac	ttttttgggggg	gagggggcgg	ggagtttgtc	gctgcctagg	cggtggaggt	720
ggctgggggt	gccttctgat	cttcctcctc	ctcccccctcc	ccccgaacct	cttctcccct	780
cacttgctgg	accccagac	gctcacagcc	ccgcgtcaat	gggcagggag	agggtccttg	840
cggctgttgt	cagcgagggc	agaatcaaaa	gtggcatttt	agtgcctttc	cggggcttttt	900
ctcgcgaccc	cctgcccccc	accctcgctg	tcccccgcta	gatgccctcg	ttgggggtgc	960
gaggctgtgg	ggaaaagttt	aaggtttgtt	aatattagtc	gcgattgttg	gcgaggggg	1020
tgggggtgat	tggaagggag	gcgaggtggc	cttcccaatg	cgcgttattc	ggggttattg	1080
aagaataata	ttgcaagtga	cagccagaag	tagactttct	gtcctcacac	cgaagaaccc	1140
gagtgagcag	gagggaggga	gagacgcgaa	gagacctttt	ttccttttttg	gagaccttgt	1200
ccgcagtgat	ttttttttttt	ttaagagaat	cctcagtcac	cacgtcgttt	ccccagcacc	1260
atcacagtgt	acagctcata	acgggttttg	ctttgttttt	acgatttccc	cccaacggat	1320
cacttgtcag	atcaatttta	tcttcttcct	cctccctgct	tcccactctc	ccctcctccc	1380
catcgcaaac	cccgttctct	gaggttagac	attttacaaa	cccctatatg	ttggttttcg	1440
aattgtgatt	ttttttttaa	acccctttct	catggctact	cttctagacg	tttatttctg	1500
cccttccccc	gcttaggggg	gcgggggtag	gggaaaggaa	aataatacaa	tttcagggga	1560
agtcgccttc	aggtctgctg	ctttttttatt	tttttttttt	aattaaaaaa	aaaaaggaca	1620

```
tagaaaacat cagtcttgaa cttctcttca agaacccggg ctgcaaagga aatctccttt  1680

gtttttgtta tttatgtgct gtcaagtttt gaagtggtga tctttagaca gtgactgagt  1740

atggatcatt tgaacgaggc aactcagggg aaagaacatt cagaaatgtc taacaatgtg  1800

agtgatccga agggtccacc agccaagatt gcccgcctgg agcagaacgg gagcccgcta  1860

ggaagaggaa ggcttgggag tacaggtgca aaaatgcagg gagtgccttt aaaacactcg  1920

ggccatctga tgaaaaccaa ccttaggaaa ggaaccatgc tgccagtttt ctgtgtggtg  1980

gaacattatg aaaacgccat tgaatatgat tgcaaggagg agcatgcaga atttgtgctg  2040

gtgagaaagg atatgctttt caaccagctg atcgaaatgg cattgctgtc tctaggttat  2100

tcacatagct ctgctgccca ggccaaaggg ctaatccagg ttggaaagtg gaatccagtt  2160

ccactgtctt acgtgacaga tgcccctgat gctacagtag cagatatgct tcaagatgtg  2220

tatcatgtgg tcacattgaa aattcagtta cacagttgcc ccaaactaga agacttgcct  2280

cccgaacaat ggtcgcacac cacagtgagg aatgctctga aggacttact gaaagatatg  2340

aatcagagtt cattggccaa ggagtgcccc ctttcacaga gtatgatttc ttccattgtg  2400

aacagtactt actatgcaaa tgtctcagca gcaaaatgtc aagaatttgg aaggtggtac  2460

aaacatttca agaagacaaa agatatgatg gttgaaatgg atagtctttc tgagctatcc  2520

cagcaaggcg ccaatcatgt caattttggc cagcaaccag ttccagggaa cacagccgag  2580

cagcctccat cccctgcgca gctctcccat ggcagccagc cctctgtccg gacacctctt  2640

ccaaacctgc accctgggct cgtatcaaca cctatcagtc ctcaattggt caaccagcag  2700

ctggtgatgg ctcagctgct gaaccagcag tatgcagtga atagacttttt agcccagcag  2760

tccttaaacc aacaatactt gaaccaccct cccccctgtca gtagatctat gaataagcct  2820

ttggagcaac aggtttcgac caacacagag gtgtcttccg aaatctacca gtgggtacgc  2880

gatgaactga acgagcagg aatctcccag gcggtatttg cacgtgtggc ttttaacaga  2940

actcagggct tgctttcaga aatcctccga aaggaagagg accccaagac tgcatcccag  3000

tctttgctgg taaaccttcg ggctatgcag aatttcttgc agttaccgga agctgaaaga  3060

gaccgaatat accaggacga aagggaaagg agcttgaatg ctgcctcggc catgggtcct  3120

gccccactca tcagcacacc acccagccgt cctcccccagg tgaaaacagc tactattgcc  3180

actgaaagga atgggaaacc agagaacaat accatgaaca ttaatgcttc catttatgat  3240

gagattcagc aggaaatgaa gcgtgctaaa gtgtctcaag cactgtttgc aaaggttgca  3300

gcaaccaaaa gccagggatg gttgtgcgag ctgttacgct ggaaagaaga tccttctcca  3360
```

```
gaaaacagaa ccctgtggga gaacctctcc atgatccgaa ggttcctcag tcttcctcag 3420

ccagaacgtg atgccatttta tgaacaggag agcaacgcgg tgcatcacca tggcgacagg 3480

ccgccccaca ttatccatgt tccagcagag cagattcagc aacagcagca gcaacagcaa 3540

cagcagcagc agcagcagca ggcaccgccg cctccacagc cacagcagca gccacagaca 3600

ggccctcggc tcccccccacg gcaacccacg gtggcctctc cagcagagtc agatgaggaa 3660

aaccgacaga agacccggcc acgaacaaaa atttcagtgg aagccttggg aatcctccag 3720

agtttcatac aagacgtggg cctgtaccct gacgaagagg ccatccagac tctgtctgcc 3780

cagctcgacc ttcccaagta caccatcatc aagttctttc agaaccagcg gtactatctc 3840

aagcaccacg gcaaactgaa ggacaattcc ggtttagagg tcgatgtggc agaatataaa 3900

gaagaggagc tgctgaagga tttggaagag agtgtccaag ataaaaatac taacaccctt 3960

ttttcagtga actagaaga agagctgtca gtggaaggaa acacagacat taatactgat 4020

ttgaaagact gagataaaag tatttgtttc gttcaacagt gccactggta tttactaaca 4080

aaatgaaaag tccaccttgt cttctctcag aaaacctttg ttgttcattg tttggccaat 4140

gaatcttcaa aaacttgcac aaacagaaaa gttggaaaag dataatacag actgcactaa 4200

atgttttcct ctgtttttaca aactgcttgg cagccccagg tgaagcatca aggattgttt 4260

ggtattaaaa tttgtgttca cgggatgcac caaagtgtgt accccgtaag catgaaacca 4320

gtgttttttttg ttttttttttt agttcttatt ccggagcctc aaacaagcat tataccttct 4380

gtgattatga tttcctctcc tataattatt tctgtagcac tccacactga tctttggaaa 4440

cttgccccctt atttaaaaaa aaaaagaaa aaaaagagtt tgttactcta ttgtatgtta 4500

caaaagaact atagactgtg gaatgcagtt taaagatgac atatgccaac aaatgccttg 4560

tattatatgg cactgccgta attcaaatttt gttttttattt tggaaataaa agttcactgt 4620

actttttttttt cattctcatt gttacatgat tttttaaaaa aaggaaaaga aaatgtgaaa 4680

cacaatttag tcctcattat ttatttgtag atcctgcagc atcatgttgt aattaatttt 4740

ttggaagttt ccgttaaatg taatattgct tctcttgtta ccatactgat tctttttctat 4800

ttataaatgt attttgatgg gcagtaaaac aaagtgtctt aaaagttttta aatagagaaa 4860

atgtgcttta cacagttgcc tataaaaagt gctctatgtt atccaagcaa ttcatactat 4920

aagcttcact cttattgttg tatgcaattt ttactatcat gcaaataagc ttaggtaaat 4980

aaaactaata gatcacctta gaaaattatg caattaatgt gaaaataatt gatgtttgca 5040

atgtgtcttc ctttggttta caatcaattt taaagctaca tctgtataaa atttctgtat 5100
```

aaaggtgtat ttctttttta tgagtttatg gctatgaaaa cagctatttt gttacagctg 5160

gctgtttttta taagtgtatc acaattttct ttatgcagaa atgttctgac taggagtggt 5220

tattgactgt aactacacaa ttaaaattgt ttgtatcgt 5259

<210> 612

<211> 3948

<212> DNA

<213> Homo sapiens

<400> 612

tatttgactt tcttctagag agatgacaga gaccacccga tgtaggagaa acaggttagg 60

gtttaagacc agaatagcta ggctgcaatc tgggttctgc aagttattgg ctccgagact 120

agggaaagtg gcctcccctc cccagtttac ttgctgggca aatggagata ataagataca 180

cacctcggca cctactgtgc gcaataatgg aaaaactgga tgggaaggca ttttgcagaa 240

ttacatgttg tgcatatact ttactcatgt cattaatata atgcacattt attatacacc 300

tactgtgtgc cattatgaac aaggtgatct gtcatatgac aatttggaag aaagtccaca 360

ggctaaggca gagaagaaat acttgtcaga tggttgtact gcacattcat agattatgat 420

tagcaacagc cagctagttg gcatagcaac gtttccccat gaactgctag gcactgttct 480

taaaataggt atgtcggagg tgtggcggca gtggggacac gctgaggtag tgtggtttga 540

tcgctctgca gaccaaaggg ctgcaacaaa tgcaagacat acaaatggtg acacacatgg 600

tgacatacag agggtgacac acatgggctg tgtgctcaga gtggccctgc cattgccctt 660

cccaggcaag ccagcaggtc agtgattaag gtgacagatc cggaaacatc cattgttgga 720

gctggagaca gcctcagact tcatctagtg taagcatcct tctcctcccc attttacagg 780

cgaggaaact gattcccaga tgaggttaac tgacatctgc ggtccagtga caaagccact 840

tgactgcaaa tgggactgaa cgtggttcgg atgtcattat gcagtattct ccaaccgtgc 900

catggggcag gctctgctga ttcagaattt taggtcttgg tctgatgcaa ttagttttct 960

actgggttgc aatctatatg gcatcatcta gtgatagatg ttagtttaag gaattctttc 1020

attttgtgtg gaattcatgc ctgcatttcg ccctggggaa gccctgaatc ccaggatatc 1080

```
ttggaaactc acctactttt tggctagact tacatgattg atctttaaat ccacccttcc  1140

gtagccttcc ttacctagtt tctcggtgtg aaatcaaaca ccaaagctgg tcaaaggttt  1200

ttgaattgct ttggaatgag attattatat gagtttagtt acccatcatt ggagagaaca  1260

gggaacgcaa gtccttttac agctggggtc ctttctattt gttttactca gcaatttatt  1320

gagtaaactt ttataaactt gagaggggct tttcatcttc aggctggtga gcttctttta  1380

agagattcac agttcccctt tggttccagg gtgaaattct aggtctgaaa cgtgaaacct  1440

tctgagaact cagccaactt ctgagaatag ggtgcgagac atttctgaca tattttagac  1500

acaacctgtt tttctctgtt gagacagtgt catgtggtcg gaagggctct gggctgggag  1560

tccaggcagg gtaagagggg ctgcagccct gccacttacc ccctccaggt catttgaagg  1620

atgtaaagac cgcattctgt actgatgatt cttcaccctg gttgcatgtt ggactcacct  1680

gcagagcttt ttaaaacact gatgcccaag cctctctcca ggccactgaa atcaagttgt  1740

attgggtggg gccctgggca gagatctatt tgaaaagctc cccagtgatt ctaatgggca  1800

gctgggggag aaccatggga atacagtcac atagtctctt tccactcccc cattccctgt  1860

gctatttaag ttctaaaatg ctattgtggg tttcttctgt gctagactca tatttattta  1920

tgctcctagc taggaaagaa atgtgtcctc agagtctaca ggaggaaact tctcatctct  1980

ggagaatttt tgaccatgag ttggctttgt aactctaccc tcagagggcc ttttaaacag  2040

ctggtggttc ttaaagaaat gaaatgcatg atgtgttact gctttgagct ccgctgtggc  2100

agagcctgga gctgagctct tggtgactgg tcactgcaca attccatgaa agttcagata  2160

atataattgg gtggtaaatg acacactaaa tgaatctctt gggtgcagtt gtttgcatcc  2220

taaactccag aatatgcaga aagagatatt ctgtgataga tatatctgcc agttgggtaa  2280

gcaaacaaaa gtagatttgt cttcggcatg tgcaccaatg gcaaactgca ttcctaccta  2340

gctttgaaat aaattattgg aagttctctg gtgccttaag gtggtgtaga aggaaaagat  2400

ccctgggggtt tgttaatgta tttagtcctc ttctctgtgt tatgggaatt tctaaaaaca  2460

gataatttgt acgttggacc taaaactgct ttcaagaact cagtagactt gggattgaag  2520

gattgggttt tctctttccc atgtgaactt ccctaaatcc tactctggct tcagaaagca  2580

cagctcctat acaagtctga cttctgcatt tttagtgtaa atgtaatgta ttgagtaatg  2640

gaaagactaa tggaagaatt gatagctcaa aaatgagttt tttccaacac catttttttt  2700

tgtctctgaa aacaccagca ggctgtgtcc aagcatgggc tgatgatccc tttatgtgat  2760

gatagaacaa gggaggagag agacaaatta atgggattgt taaaaatggc tgaaaacttg  2820
```

```
atactaactt tgagtcagta ttttcttttt aaagtcgtgt aatacaatat ttgtagatag   2880

gacattgaaa gtgatggggg aaataaatgt ctatgcagtg acgttatagc cattaattct   2940

ttagtggaaa aggacaaggt ctgtacctaa cagcagtagg agagtgagtt ttggggccag   3000

acacgcgacg gctctgctgc cgactaactg tgcaagcttg gacagggtac ctacctctct   3060

taacctcaaa gtcctccatg gaaacagtgg gtaaggtgtg aagattaaag aaatagcatg   3120

cttcttaaag cactcagcat gtcagtggat gttgggagcc ttccctcacc cctttgaaaa   3180

tgggctctgc acaaacacat tttggtggga ggctggggtc tatcctacca acctgagttg   3240

ggggaataag atgatctctt ccacagttcg ggtttgcaca accagctttt gcaggtgagg   3300

cagggaagag gcatgagtgt cattggcaga gtgataagcg aggctggcaa gttcactttg   3360

gtagaacctc tgtggactcc ttagttcttc caggttgaat cctgggcaga aatcacatga   3420

aagctgtgaa gcacagacat cagtttagaa attgtgtact ttcccgctga atcccaaatg   3480

cacaataact gtacaccttg cggttgcatg aatctacaag gtctcctatg cgccctcatt   3540

cataaactca aggctgagaa tgttggcagg ccaagtcctg cccctccccg gagtgagctg   3600

ccttggttca cacgggagtg gtccagcgac aggacccgac acctcccctc cggaagctct   3660

tcagcaggac ctgcctcggg tcctggggca gctatcctcc ggggcctgcc tgcagtgaaa   3720

ccatcagtcc gtggagatgt tcactggatt cctgaccagt tgtgggtcgg gctcaaccct   3780

ccctctgggt tttcaggatt tgtaatgatc gctccatttg tgtaaaatag gccggcattt   3840

tctcttgtta ctgagatgta tttttctatg tgagttaaat gtataatttg tgtaattttg   3900

tacattaaaa tgtatgcttt ttcacaatta aagggttttt ttcccttc              3948
```

<210> 613

<211> 3938

<212> DNA

<213> Homo sapiens

<400> 613

```
aggcccctgc tagacccatg gaaagctgta tggagattcc acttctccgg ggtttggtag     60

tgattgggcg gggatacctg agagggtgcc aggaaagggt ccagcagtca aagagaaggg    120
```

gccaaggagt cgataattat gatgagctct ggctttactt gtgcaccttg gtctcctgct   180

cggaacccct tgaaaagaagc tgcagctttt cgaggaatgc aggggcaagc aagactcaca   240

caggcactgg cattcttcta gatccgatgt cccttgcccc accccttact gtggctctgc   300

cttgggtaat cacaacaaat cttcatgact tgcctaggct gtgccaaaaa gatgtaaaag   360

gaacccacca gggtaagatg ccaacttgca gacgacgatc aactgtgtct gacaaggttg   420

ttctggaatc atagttgaag aaacagttgg ctagactcta acagctgttc acaatttctc   480

gtatctctcc tgatggagga cagtgttttt aaagtggcta ctccaaaaat aatcacacaa   540

ggcaggattt catctatccc taatattctc agaaggttca tcagtggcat gatgacagaa   600

aaagtgctac aaaagccatg tgaagaagta catgtttgct tccccttctg tcatgattgt   660

aagtttcctg aagcctccag agccatgctg aactaaacct tgtgattaca ttgagcctac   720

ctgaatgatc caggataatc gtcccatatc aaggagagca aagtgaatag tgtggtttgc   780

ttagaggaca atgctgctac aaaaacctgt tccactccaa ggccaactgc agttttgaga   840

tgtttgagtt gctcccagtt ttatgctacc atgaatgaga ggacggatcc aacattcaaa   900

tggtcttggg tctgcatctt agctcggcca ctggatagct gtacaactac ggagtcttgc   960

tctgctgccc aggctggagt gcagtggcgc gatctcgact cactacaact ccgcctccc   1020

ggattcaagc gattctcctg ccttagcctc ccgagcagct ggaactacag gcacgtgcca   1080

ccacgcccag ctaatttttt tgtatttta gtagagacgg ggtttcacca tgttagcccg   1140

gatggtctca attgttctgg agtctttctc taatacacta catacaatcc ataggcaaat   1200

tctgttggcg tcaccttcga aatctacccc aaatcttact atttttacag cacttcaacc   1260

accagtacct tatcaaaaac cacttctata tttcttgtaa attattggaa cagccctta   1320

cctggtcttc ctgtttctgc cttttgcatc ccttcttcct tcctctcctc cacacatacc   1380

actaaaatcg cagcattgca actacagtaa taaatacatc acttctctgc acaaaagctt   1440

ctggtggctt cccccctcac tcaggaagtc tttatagtac tccagaagat cactttctgg   1500

ccttccctgt tgggctcatt ttctatttct accttgccca ctctgttgca gccacactct   1560

cctccctgct gattcgtgaa cacactgacc atgctcttgc ttcaagaaca cttacattgc   1620

tgttccctct gccaggacag ttcctctagt atccactcac ctcattcagt ttctgcacaa   1680

atgtcacttt tacaataaag tcatccctaa agaactaatt taaaattgta ccctactaaa   1740

tagaaatccc cttacctcac ttagaacact ctaaaagtgc tctaaaggac taaattagca   1800

atttagccct ttagtacccc actgattagc aatccccta cccacttag agagtgctct   1860

actagtactt taggtagtac catctaaaca gtgatgccac tgtcagacta aaaatcacca 1920

tcataggtag atacattaat ttaaatcaga taaacgtaat catctaattt gaacattata 1980

tttcatctac aatatccact tattcaacag gtatttattg accatgctgt acaattttct 2040

aggtgcagaa gatacatcac ttaacaaaga agatcactac acttggttac ttggagttta 2100

tatttgaatt ggtaaaatat atggcagaaa cggaaagtgc tgagaaggac caaattagta 2160

atgagtaatt tagccctttaa gtgccctact gattagcaat cctcttaccc cacttataga 2220

gtgctcttct agtactttag atagcagcat ctaaacagta gcatctaaac cccttgggat 2280

tgctaattac cctactttag gaggtaatta catgaggatg gtgaagcctt tatggaagga 2340

attagggtcc ttataaaagc acttgaggca gtgggtccac tctcttttgc tcttccacca 2400

tgtgaggaca cagcattcaa agcaccacct tggaagcaga gataaggctc tcaccagaca 2460

ccaaacctgc ctgcccttg attttggaca tccagccttc agaactgtga gaagtacatt 2520

tctattattt atgaattacc cagtctggta ttttattata gcagcataaa gagactgtga 2580

tagaaggtat gaatttttgt tctaaacgag gactgggggt ggtaggaact tgaaaacaat 2640

gctaatataa caaatcaatt agattgcttc tagctatttt attttctttt cattaattag 2700

taattccaat ccagttctgg gtgtgaagtt ctacaggtaa aacatgttcc ttttagatat 2760

tttcctctga aaagaattgg ggaaatattg caaaggaaaa ggaaaaggga aaggagtgat 2820

tctgacattt atgaatttgt gatattatgt actgaaatta tgacctgatt gtatatttct 2880

ccctagtctg catataggga ggttattcag cccttccacc ttctgccatg ggatggcaca 2940

gcaagaaggc cctcatcaga tacaggcccc tcagccttgg ttttccagtc attagaactc 3000

attgccatct atattttcac tcctgagaag tttgaaaatt aaaaaaaaaa aaaagatcat 3060

caagaataag ggatgaacca caaaaagaaa gaaaggctgg aagaaggttt tacagatttt 3120

taagaaatat aactcatttg cctgagcatt ctttcaacat cctcatttta aggttacttc 3180

taaaaagaag aaatgatttt taatatttcc ttcatctgga gaaataactg tcgctgttcg 3240

gtattcacag acttcctgct gaggactgct atcgcaataa actctggtct cacgataggc 3300

agccatgatg agaaacggcc cctgcataga gatggtttga actgtgtggc tccctcctgc 3360

cccatataac catcgcgaga agaatgtaac agcggccctc cattagtgaa ccttttaccg 3420

tgattcccga gtcataaccc cgacccacct tgaaatctac tgctggcatt ttctcgtcat 3480

tggtttgaca catgaattag cagtttaaga ctttgcctcc ctactaacac caacatctta 3540

tttgtatggc tctggcacta gttcctgcct ccttgtcctc taactctaat cccagttatc 3600

accccttaatt cagtatgctc ttggatctct ggttaaatct cttagaactt tccattcaaa 3660

ataacatact ttatacttca gagccaccct taggtttggt acttctacta tgtccatgaa 3720

ttgaattttt gcatctgttt ctctatatat gtatttttca tttaaaatat ttgttcttaa 3780

gtcgtataat ttacctggtg aaagaccata caacagtact tgcatgtagt ctccctataa 3840

ctgatgaacg tgcatgtttc ttttctccga taaattttat gtcaatttta ctacattatt 3900

gaaattcccc cagcgtaatg tgataaaatt tatcaact 3938

<210> 614

<211> 5831

<212> DNA

<213> Homo sapiens

<400> 614

agcctcggtg ccgcctgcca gcccgcggag ggaagcggtc cccgacccgg ccccggcccc 60

cacgctctgg ggcgcgagtc ctgagaaggc gcctaacgtg tagcgcgcct ggaccctctc 120

gagatgctgc ccttagagtg ggatgaaagt ctggggagga acgccttgtc accggcaaaa 180

acagcctttc tcttggtctt cgtctgcatc ctccttttca aaatatcttg atttcccccg 240

cgcaccccctg acccggctgc agcaccggcc ctccgagcgg gaagagcccc gtgaaggctc 300

cgcagagcga tctaccccgc gctcttgtcc gtgcccagag agcgggttcc acttggcagg 360

gattattta aactgctacc agcaattcat tcacctgaca cccgacaccg gcagcccagc 420

ccgccggagg cgagacagga ttgtccggtg cccgctagag gtcgccaaac ggagtccttt 480

tgcgctggtt cttaagtgga ttcctagtga aaaggcagac aactgaaaat attatgtcta 540

ctttgagaat tcctccagca acccatacct aataagaagg atagaagaac tcaacaagac 600

tgcaagtggc aacgtggaag caaaagtagt atgcttttat agacgacgtg atatttccaa 660

cacacttata atgctcgcag ataagcatgc taaagaaatt gaggaagaat ctgaaacaac 720

agttgaggct gacttgaccg ataagcagaa acatcagttg aaacataggg aactcttttt 780

gtcacgccag tatgaatctc tgcccgcaac acatatcagg ggaaagtgca gtgttgccct 840

tctgaatgag acagaatcag tattgtcata tcttgataag gaggatacct tcttctactc 900

```
attggtctat gacccctcat tgaaaacact attagctgac aaaggtgaaa tcagagtggg   960

acctagatat caagcagaca ttccagaaat gctgttagaa ggagaatcag atgagaggga  1020

acaatcaaaa ttggaagtta aagtttggga tccaaatagc ccacttacgg atcgacagat  1080

tgaccagttt ttagttgtag cacgtgctgt tgggacattc gccagagccc tggattgcag  1140

cagttctgtg aggcagccta gtttgcatat gagtgctgct gcagcttccc gagacatcac  1200

cttgtttcac gctatggata cattgtatag acacagctat gatttgagca gtgccattag  1260

tgtcttagta ccactcggag gacctgtttt atgcagagat gaaatggagg aatggtcagc  1320

ctctgaagct agcttatttg aagaggcact ggaaaaatat ggcaaagact tcaatgacat  1380

acggcaagat tttcttcctt ggaaatcatt gactagcatc attgaatatt attacatgtg  1440

gaaaactact gacagatatg tgcaacagaa acgtctaaaa gcagcagaag ctgagagtaa  1500

actgaaacaa gtatatatcc caacctacaa accaaatccc aaccaaatat ccactagtaa  1560

tgggaagcct ggtgctgtga atggagctgt ggggaccacg ttccagcctc agaatcctct  1620

cttagggaga gcctgtgaga gctgctatgc tacacagtct caccagtggt attcttgggg  1680

cccacctaat atgcagtgta gattatgtgc aatttgttgg ctttattgga aaaaatatgg  1740

aggcttgaaa atgcccaccc agtcagaaga agagaagtta tctcctagcc caactacaga  1800

ggaccctcgt gttagaagtc acgtgtcccg ccaggccatg cagggaatgc cagtccgaaa  1860

cactgggagt ccaaagtctg cagtgaagac ccgccaagct ttcttccttc atactacata  1920

tttcacaaaa tttgctcgtc aggtctgcaa aaataccctc cggctgcggc aggcagcaag  1980

acggccgttt gttgctatta attatgctgc cattagggca gaatatgcag acagacatgc  2040

tgaactatct ggaagtccac tgaaaagcaa aagcactagg aagcctttgg catgtatcat  2100

tgggtattta gagatccatc ctgcaaagaa acctaatgta attcgatcta caccaagcct  2160

gcaaacccca actaccaagc ggatgctaac aactccaaat cacacatctc tgagcattct  2220

ggggaaaaga aactacagtc atcacaatgg tctggatgaa ctcacgtgct gtgtgtcaga  2280

ctgagctttc cctgattcat tctacaatcc aagacttgct gcactgtcct gctgatgttc  2340

acagccgtgc ctgggaagaa ggcagccgga ctcccagtac atttcagtgg agacctctg  2400

cgtgcatcca tggagacgca atggggcggg gaaggaactg tgggagtgca cgttccaaat  2460

cctgtgtctc cacgtgtgga tcagcagcac ctcgctttct tgtcagagac ctcgctgtta  2520

cggagcgaga cctgctgaga attgaggggc tgagggaacc cctccacctc ctcccttctg  2580

cagcgccctg cgccccaccc agcaacagcg gccacttggc agtggggctg ctgcaagctc  2640
```

agagccgctg ccaccctgca tgtgtccgct cagctcggtc ttatgctgta tagttactaa　2700

atatgtacag gagggccatg gcatctttct gaatggattt ttcttaagaa atgcgccagt　2760

gtttatgagg ttcaaggtat ttccctgtcc ttgctgttac cgtcactcag ctttttctcg　2820

ataggcttca tccttgtttt tttgaaatgg gggaatttgc tgtttacccct ctgcattcct　2880

atatgtgacc ctccctccta ctcctccaag gaacagaatt accgaggttc tgacaaaaga　2940

taagcctgta aactcatcat ctgtgttttg tggttggaga gaagctggtg ttctgcccgg　3000

ctctgcttgg tcacagacag ctccagcaag agcagttgtt aaaagtgcca agcgtgtgta　3060

tcactgtgac aagccgtttg cttactgccc tgttcccttg cagccaaacc agctgatgaa　3120

gaactgctgc caggtgggtc ctacagcagg tcacaaatga cctagtttca ttttaagcag　3180

acagactctg tttggcctag aggtgtggag tgagagaact gtgtttgtgg gtatgagtct　3240

gtgtggccaa ccccatgacc cccacccctc cagcccaaca tcttgtgagc acatgtgacc　3300

taggcccccgg gggacctgcc tgctcctttg gcttgggctc ttcgtgtttc ccacctgccc　3360

tcggcacgag cccttggtgg catcacagtt ggccactcag ctgtgctgag tagctgtgct　3420

acttgtgctg gcagctgcaa ggataggaat agctcagcgc ccgatgagct ccctgagcag　3480

atgtgaggct ggcaactccc ctgccctctg tttgcaggca cagggtcaca gtcccaagaa　3540

agacaactgg agtctgatct cccagccatc tctggggtta ctaggaggca gctggatggc　3600

agatacgaga ggcccaaata gccaagctgt tgcaagacag agtggctaca attgaattga　3660

caccctggga agcacgaggt aacttggtaa ggataatgat gctgtagatg tctgtgtcct　3720

cggaggctga gctctgcttg gcagagagag cgtgctgtgt gaggtggagg gcggttttgc　3780

agacatctca gcttctttte tgaggaggag ttggttctca tcttaggctt ctgcaagggc　3840

gagcatggga tgtctccacc accacccact cttggagctg tgctgggtct tggcttgggg　3900

cgctgagggt gggacctgta tcagaagcat ttggtgagag gggtggaggt ggcaggcagg　3960

ggttctcctc agggttccca ctgaggggtc ccttcagcaa agacctggga ggaggtgccg　4020

catcacgtgg atgtttcttc cctaaagaaa aagacacagg aaagctgtct gtctgtaccc　4080

tgctctggat ttattgtcgt acttggaccc agaagggggaa atgattccct caccctttca　4140

ctttctctct gaacccctac taagtggtga ctgcagattc tggaaacaat tagctgcccg　4200

tgactcagct gccagcttca ttttctctgc cttttgggag aggccctctc acccaggccc　4260

aagagatttg gagacaggag tcaggccagg tctgaagcag gagaagggag gcccctccta　4320

tctacccagt tgacatttgg cttgtgggaaa agcgcagctt gttcgagcca cgtgtgccaa　4380

gcaggctttt ccttcctctt gtaagtaaag ctcgtggttc tgtagtccag tcatcctagg 4440

agggtgatgt tgactgagac ttcacgctct ccctttgtct ctggaaactg ccccctcgtt 4500

ctgacagaat cccccaggca atggaggaag ggtgccgagg cgcctctagt ctgtgccttt 4560

gccgttggaa gcatttggtg ctgagagggt ttcccagcca cccgctccct ttctggggcc 4620

atggtgtccc tgctgtgtgt cagtggcatg tcactgtggt tcagtgagca catgggtgga 4680

cgtgcagaga ctgtctgcgc agcccccagc agacatgccc ctggggtgag gacacaggct 4740

ctgcaggcca tctccccctc tggctcagtc atcgcctgcc cacccttcac ttcttaaagg 4800

tgcgcaagag aggagggccg actggagggt gtcgccggaa ggtttcagcc tgcccttcac 4860

aattcccctt gtgcacagcc cagtttccat ctctcagggc ccacccagga aaatggattt 4920

caagtggggg ttttcatcca gagatttgtt taacacaaaa caagaaaagc tgagaggcaa 4980

aacaggggag tgaggggcaa cccagaggtg gggaacaaca acagcaagcc gcccccatcc 5040

tgagactggc tgggcaccag gggaggacgc gtcaccagag cctggggcca aggccactgg 5100

gggacctgcc acactgtgga cctgtctggt gggggctgga gcctcgagaa gccatgattc 5160

ttgtcagaaa catttcccca ggcagagaga gggggcccca gcctctcccc tcctcttggc 5220

ctccagagtc ctgcaggtgc ctcacagtag tgaaacccag ttggaagcag ctgccctggg 5280

agcctgggac aggcgaccca ccgggtcagt cccctgccac tcagagcaga gcaggggggct 5340

gagggcaagc aggtggggct gtgcgtggcc tcagtgcact cggtgtcatg tctgagcctg 5400

gtgtttatgc cccactgctg tcctaagtcc ctggcgaggg gaggtggagg agctgccccg 5460

tgggtgtttg gaggttctgt tttactctgc ctagagagga aacggctttg gggagggagg 5520

gggaagcctt tattctttac tgttgtccct gttttccttt gggggaattt actcagttag 5580

cagcccctcc tcaccattcc ccccaggaag gccatgtccc agttttctgt ccacccctcc 5640

tgttcctctg cactatgtct ctgattttcc ctgccaggga agctaaccca gagcacgcac 5700

ctgtgctcat gagtgtttcc gcaggataat tcgttctgag catgatacca cagtgtggat 5760

tgtctgtctg taaggagatg ccatctacta accaatttgt attgtgtttc caataaattc 5820

ctggaaattt t 5831

<210> 615

<211> 5136

<212> DNA

<213> Homo sapiens

<400> 615

ttctgatgcc	ttatggttac	gtgttaaatg	aatcccagag	tcgccaaaat	tcatcttcag	60
cacagggttc	ttcttcaaac	agtggcggag	gttctggaat	cccacagcct	cctccgggaa	120
tgagctttta	tgcagccaaa	cgagttattg	gtgataaccc	atggacacct	gaacaattgg	180
aacagtgcaa	attgggaatc	gtgaaattca	tagaagctga	acaggtgcct	gaacttgaag	240
ctgttctcca	cttggtgatt	gcctctagtg	atacacgcca	cagtgtggca	acggcagcag	300
acctggaatt	gaaaagcaaa	cagagcttaa	ttgactggaa	taatcctgcc	atcattaata	360
agatgtacaa	ggtgtacctt	ggagatatac	cactgaagac	aaaagagggt	gcagttctga	420
agccagagtt	gaaaagggac	cctgtcagta	caagagtcaa	gttaaagatt	gtcccccatc	480
tcctccgctc	tagacaagct	gctgaaacgt	tcccagccaa	cattcaggtg	gtgtatgatg	540
gactttttgg	tacaaataca	aattcaaagt	taagaacatt	atccctgcaa	tttgtgcatc	600
atatttgtat	aacctgtcca	gaaatcaaga	ttaagccatt	aggtccaatg	cttttgaatg	660
gcctcaccaa	gctaatcaat	gaatacaaag	aggaccctaa	actactgtca	atggcatatt	720
cagctgttgg	aaaactctcc	agtcggatgc	cacatttatt	cactaaggat	atagcgcttg	780
tgcagcagct	ttttgaagcc	ctttgcaagg	aagagcctga	gactcgactt	gctattcaag	840
aagctttatc	tatgatggtt	ggagcgtata	gtactttgga	aggggcacag	cgaactctca	900
tggaggcact	tgtggcttcg	tacttaataa	agcctgaagt	tcaagttcga	caagtggctg	960
tgaaatttgc	cagtacggtg	tttccctcag	atcatatccc	ttccagatat	ttgctgctac	1020
tggctgcagg	agatccacgt	gaagaagttc	atggagaagc	acaacgcgtt	aaggtgtctt	1080
ccaggtagaa	acagaaaaga	aagtacttct	gagcagatgc	cttccttccc	agaaatggtt	1140
tattacatcc	aagaaaaggc	ttctcatcga	atgaaaactc	cagtcaagta	catgaccggg	1200
accactgtcc	ttccatttaa	cccagcagcc	tttggagaga	tcgttctgta	cttgcgcatg	1260
tgccttgcgc	acagtgcggg	ggtggtgccc	acctctcaga	gtttggctga	tatgcaggat	1320
catgccccag	ccattgggcg	ctacatacgg	actttaatgt	caagcgggca	gatggcaccc	1380
tcatcatcta	acaagagtgg	ggagactaac	cctgtccaga	tctacattgg	cctgcttcag	1440
cagctgttag	caggtgttgg	aggtttgccg	gttatgtact	gtctattgga	agctgtgtca	1500

gtgtatccag aaaagctggc taccaaattt gtagacaaaa cagaatggat aaagagtctg 1560

atgaataaca gtaaagaaga aatgcgcgaa ctggcagcgt tgttttattc tgtagtggta 1620

tcaacagtgt cggggaatga gttgaaatca atgatagaac agcttataaa gactacaaaa 1680

gacaatcaca gcccggagat acagcatgga tccttgcttg cattgggatt cacggtggga 1740

aggtatttgg ctaaaaagaa aatgagaatg tcagagcaac aagacctgga gagaaatgct 1800

gacaccctcc ctgatcaaga ggaactcatt cagagtgcta cagaaacaat aggctcattt 1860

ttggacagta catcacccct cctggcaatt gctgcctgca gccctggg tgaaattggc 1920

agaaatggtc cacttccaat ccccagtgag ggatctggct ttaccaaatt gcatcttgta 1980

gaaagcttac taagtagaat accttccagt aaagaaacaa ataagatgaa agaacgagca 2040

atccaaacac tgggatattt tccagttggg gatggagatt ttcctcacca gaaactcctc 2100

ttgcaaggtc tgatggattc tgtggaggcc aagcagatag aacttcagtt cactattggc 2160

gaagccatta ccagtgctgc aataggaact agttctgtgg ctgcccgaga tgcctggcaa 2220

atgactgaag aggaatatac tccacctgct ggagccaaag tgaatgatgt ggttccatgg 2280

gtgttggatg tgattttaaa taaacatatc atcagcccca acccacacgt gaggcaagca 2340

gcctgcatct ggctcctttc ccttgtcagg aagctaagta cccacaaaga agtgaagtct 2400

catcttaaag aaattcaaag tgcatttgtt tcagttctat cagaaaatga tgaacttagc 2460

caagatgttg catcaaaggg ccttgggttg gtttatgaac taggcaatga acaagatcaa 2520

caggaattgg tttctacact tgtggaaaca cttatgactg gcaaaagagt taaacatgaa 2580

gtttctggag agacagtggt atttcaaggg ggagctcttg gcaaaacacc agatggtcag 2640

ggcctttcta cttacaagga actttgttct ctggcaagtg atcttagcca gccagatctg 2700

gtgtataaat ttatgaattt agccaaccat catgcaatgt ggaactctag gaagggtgct 2760

gctttttggtt ttaatgtaat tgctaccaga gctggagagc agctggctcc ttttctgcct 2820

cagctagttc ctcgacttta tcgttaccag tttgatccca accttggcat tcgacaggcc 2880

atgacaagta tttggaatgc gttggtcact gacaaatcca tggtggataa atatttgaaa 2940

gaaattcttc aagatttggt taagaacctt acaagcaata tgtggcgagt tcgagaatcc 3000

agctgtttag ctttgaatga tttattgaga ggaagaccct tagatgacat cattgataaa 3060

cttccagaaa tttgggaaac gcttttttaga gtacaagatg atatcaagga atctgtacga 3120

aaagcggcag aactagctct gaaaactctg agcaaggtct gtgtgaaaat gtgtgaccct 3180

gccaaaggag cagctggcca gagaaccatc gctgcccttc tgccttgcct tctggacaaa 3240

ggaatgatga gcaccgtgac ggaagttcga gccctcagca ttaacaccct tgtgaagatc 3300

agcaaaagtg caggagccat gttgaaaccg catgcaccaa aactcattcc agctctgcta 3360

gagtccttaa gtgtattgga gccccaagtt ctcaattatt tgagcctccg ggcgacagag 3420

caagaaaagg ctgcgatgga tagtgctcgg cttagtgctg ccaaatcttc tccaatgatg 3480

gaaacaatca acatgtgcct gcaatacctt gatgtgtcag tgctgggcga gctagttcct 3540

aggttgtgtg aactgatcag aagtggtgta ggtcttggaa ctaagggtgg ctgtgccagt 3600

gtcattgtgt cattaactac tcagtgtcct caggacctaa caccttactc aggtaaactt 3660

atgagtgctt tgctgagtgg cctgacagat cggaacagtg tgattcagaa atcttgtgca 3720

tttgctatgg gccatttagt tcggacctca cgggatagca gcactgaaaa actcctgcag 3780

aagctcaatg ggtggtatat ggagaaagaa gaacctatct acaagacctc ttgtgctttg 3840

actattcatg ctattggacg atacagccct gatgtattaa agaatcatgc aaaagaagtc 3900

ctgcctctgg cattttagg catgcatgaa attgctgatg aggagaaatc cgaaaaagaa 3960

gaatgtaatt tatggaccga agtgtggcag gaaaacgtac ctggatcctt tggtggcatt 4020

cgattatacc tgcaggagtt aattactatt acccagaagg ctttgcagtc tcagtcctgg 4080

aaaatgaaag cccagggtgc aattgccatg gcatcaattg caaaacagac tagctctcta 4140

gtacctccat atctcggaat gatactgacc gcattgctgc aaggcctggc tggaagaacg 4200

tgggcaggaa aggaggagct attgaaagcc attgcctgtg tggtgacagc ttgcagtgca 4260

gagctggaaa agtctgtgcc caatcaaccc agcacaaatg aaattcttca agctgttctg 4320

aaggaatgta gcaaagagaa tgtcaaatac aagattgtag caatcagctg tgcagctgat 4380

atcttgaagg ccaccaaaga ggacagattc caggagttct ctaacattgt catacctctc 4440

atcaagaaga actcacttga aagcagtggg gtccggacaa ccaaaaatga agaggagaat 4500

gaaaaggaaa aggagctcca gctggaatat ctgctgggtg cctttgaaag cctgggcaaa 4560

gcctggccgc gaaacgcgga gacccaacgt tgttatcgtc aggagctgtg caaactgatg 4620

tgtgaacggc taaaactcag cacgtggaaa gtgcagctag gagtcctgca atcaatgaat 4680

gcctttttc aggggttaat gcttttggaa gaagaacatg ccgatcctga ggctttggct 4740

gaaattctgc ttgaaacttg taaatcaatc acatattctt tagaaaataa gacctactca 4800

tctgtgagaa cagaagcttt atctgtgata gaattgctgc ttaaaaaact tgaagaatct 4860

aaacagtggg aatgtttgac atctgaatgc agagtgctcc taattgagtc tttagctact 4920

atggagccag acagcagacc tgaactgcag gagaaagcag cgttactgaa gaaaacactt 4980

gaaaatctgg aataaattag aaggggaaga aacaaacaag tgccatgttc attggggggtt   5040

gaagtggtgg tgttctttga aaaaccaagt gggaaaaagt aaagattaat ctgtagcatg   5100

catcattcct tggctgaaat aaaaagaaaa agcctt   5136

<210> 616

<211> 4113

<212> DNA

<213> Homo sapiens

<400> 616

gatgtggtga cgtcgtgctc tcccgggccg ggtccgagcc gcgacgggcg aggggcggac   60

gttcgtggag ggtaggatgg tacacacatg ggtggctgct tctgcatccc cagggagcgg   120

agtctgaccc ggggcccagg taaagaaact ccttccaagg atccaactgt atcgagtgag   180

tgtatagcct catctgaata caaggaaaaa tgttttctgc cacagaacat taatccagac   240

ctgacactct ccttctgtgt aaagagccgc tccaggaggt gtgtaaatgg acccctacag   300

gaagctgctc ggaggcggct ctgggcactg gagaatgagg accaggaggt gcgcatgctg   360

tttaaggacc tctcagcaag gttggtcagt atccagtctc agagggccca gtttctcatc   420

accttcaaga ccatggagga aatctggaag ttctccacct accttaattt aggctacgta   480

tccatgtgtc tagaacatct cctctttgac cacaagtact ggctcaactg catattggtg   540

gaggatacag agatccaagt gtctgtagat gataaacacc tggaaacaat atacctggga   600

ctcctgatac aggaaggcca cttcttctgc agagccctgt gctccgtgac tccaccagcc   660

gagaaggaag gggaatgctt gacactttgc aagaatgagt taatctcagt gaagatggca   720

gaagctggct ccgagttgga aggcgtgtct ttggtgacag gtggttccta aagaattatc   780

caggaagctg tggcctttcc aggaagaggg attggacagg ctcctatcag attggcagag   840

gacgctgtaa ggccttgacg ggttatgagc caggagaaaa ggatgaactg aatttctacc   900

agggagaaag cattgagatc atcggctttg tcatacctgg gcttcagtgg ttcattggaa   960

agtcgacaag ttcaggacaa gtgggctttg tccccaccag gaacatagat cctgattctt   1020

attccccaat gacttggtgt gtttcttcaa tatgaagatt catgtctttc ttcaattctg   1080

gaaaattttc agtccttctt cctttgaata ttgcctctct ctcgttcttt ttagtctctc 1140

ttctggaatt cctattagag gagcaggaac tctgcctttc tcagtgatga ggagagatgc 1200

tccctgttgg ccctgggaag tgataagcag actgagtgtt ccagcttcct ccacactctt 1260

gctcgcactg acatcacatc tgtctaccgg ctcagtgggt ttgaatccat ccagaatcct 1320

ccaaatgatc tgagtgcatc ccagcctgaa ggcttcaagg aggtcaggcc tggcagagcc 1380

tgggaggagc atcaggccgt ggggtccaga cagtccagca gctctgagga ctccagcctg 1440

gaggaggagc tcctctcggc cacctcagac agctatcgcc tgccggagcc tgatgacctt 1500

gatgacccgg aactgctcat ggacctaagc actggtcagg aggaggaggc tgagaacttc 1560

gcccccatat tggctttтct ggatcatgag ggttatgctg accactttaa gagtctctat 1620

gacttctcct tctctttcct cacttcttcc ttttatagct tctctgagga ggatgagttt 1680

gtggcctacc tggaggcatc aagaaagtgg gccaagaaga gccacatgac ctgggcccat 1740

gcccggctct gcttcctcct gggccggctg agcatcagga aggtcaaact ctctcaggcc 1800

agggtgtact tcgaggaggc catccacatt ctcaatggag catttgagga cctatccttg 1860

gtggccactc tgtacatcaa tttggctgcc atctacctga aacagaggct gagacataaa 1920

ggctccgccc tgttggaaaa ggcaggtgcc ctgctggcct gcctgcctga ccgtgagtct 1980

agtgccaagc atgaactcga cgtggtggcc tacgtgctgc gccaggggat tgtggtgggc 2040

agcagcccgc tggaggccag ggcctgcttt ctggccatcc gcttgctcct gagcctaggc 2100

cggcacgagg aggtcctgcc ctttgccgag cgcctgcagc tcctctctgg acaccctcct 2160

gcctctgagg ctgtggccag tgttttgagt tttctgtatg acaagaaata tcttccacac 2220

cttgcagtgg cctctgtcca gcaacatggt atccagagtg cccaagggat gtctcttcct 2280

atttggcagg tccaccttgt cctccagaac acaaccaagc tccttggctt tccttcccca 2340

ggctggggtg aagtttctgc cttggcctgc ccaatgctca gacaggccct ggctgcctgt 2400

gaggaactag cagaccggag cacccagagg gccctgtgtc tcatcctttc caaagtgtac 2460

ctcgagcaca ggtctcctga cggtgccatc cactacctga gccaggcctt ggtgctaggg 2520

cagctgctgg gtgagcagga atcctttgag tcttctctct gcctggcatg ggcctatctc 2580

ttagccagcc aggccaagaa ggctttggat gtgcttgagc cactgctatg ctccctgaag 2640

gagacagaga gtctcactca aaggggagtc atctataacc tcctgggact tgcactccaa 2700

ggtgaaggcc gggtgaacag ggcagccaag agctatcttc gggccttgaa cagagcccag 2760

gaggtgggag atgtgcataa ccaggcagtg gctatggcca atcttggcca cctgagcctt 2820

aagtcctggg ctcagcatcc agccagaaac tatctcctgc aggctgtacg actctattgt　2880

gaacttcagg ccagtaagga gacagacatg gaattagtac aggtgtttct ctggttggcc　2940

caagttctgg tgtctggaca ccagctgacc catggccttc tttgttatga aatggcattg　3000

ctgtttggct taaggcatcg acatctaaag agtaagtatg tcccatgctg ctgggaagct　3060

atagagagaa gtgttggatc aagttttatc catttcctat ctcaagtcat ctcattcatg　3120

tccctgcttt gtgttcaggt cagcttcagg ccaccaaatc cctctgccat ttctacagct　3180

ctgtgtcccc aaaccctgag gcatgcatca cctaccatga gcactggctg ccctggctc　3240

agcaactcag ggaccgggag atggaaggaa ggctgctgga gtccctgggg cagctttatc　3300

ggaacctaaa taccgccagg tgagtcaggg tcaggaactg tcctagaagc agctttcctt　3360

ccttaaggag aaacagtgtt ctttcccaca ggaagcaagt ccaaatgtac atggtatagg　3420

cagggctttg tgcaaaagag caagggctct gcagccacca caatgcatcc atcacttatt　3480

agtggtgtag ccttgggcaa gctatttaat ttctccatgt ctcagtttcc tcatcagcca　3540

aaggaagata ataatggcat ctatcttata gtgttattgt gaaggataaa tgagttaatg　3600

ctcataaaac actcataact gtgcctgata catagatagg tctcagtaat gccactgtta　3660

cttgtgtgtt tctataacca cctgtcacag gatcatgact gaggctgcat aattcagaga　3720

agtggcagtt ataccaagga cagaagaacc ttcaggaggt cttcattgcc aagggcaact　3780

ggttttaaag aaaggtcacc cccactgaaa gcaggggtgt aaaatgtcat ggtaaaaaaa　3840

agtttatcg ggaacttacc tttaaaatga aattgtagat tatgaaatga agtgtgtttt　3900

cacctttag ttaagaatat ttagattaca atttcaactt tgcattaagt ctcagaataa　3960

acatggaata aaaggagtgt tgactttttg gcttaattgt gctgacaaaa tgatgtaaca　4020

gcacaatgga gcattctttg ttttgtgatt gatttttag gactacctta aaaatcctca　4080

tttttgtaaa aataaatcaa aacttaacag ttt　　　　　　　　　　　　　　4113

<210> 617

<211> 4007

<212> DNA

<213> Homo sapiens

<400> 617

```
ttaataatgg aatcacattt ataaaccact ctgcagcttt cctgctcagc agcacgtcat    60

cagctatttt cctgtgagca catgattgcc ggctgtgcgc tggttctccg agccatgttc   120

cccgttcaca ggctcttacc cgcagtgctg ccacggcgcc gtgtgcatcc caggatcttg   180

caggtgtccg ctggccgccg tctgcaggga gtggcccctta agccctcact tggttctgtg   240

tccccaggct tgctctcctg gcctcttccc tcaccatgcc gcgtcccctt actctgacct   300

tggccaatca ggacctgcgt gtctggtgga ttttggaagc cacctcactg gggacggggg   360

acataggcca ggggacagcc tgtgagaggg ctgggccacg gggactgcag aggaggagca   420

tccacggcac ctagatgcag gagaccctcg tgggcaggag cgtggctggt ggcgcggtgg   480

cctcaggagc agtgaggccg tcccctcaac ctcttctgtg gaagcagaga tgccactcgc   540

cagacggcat ccagtaaagg gggcctggga ccctctgggg gactctcaag tcccagaccc   600

cctggtccat gtccttgcca ctgtgctggc cgaggggccc ctcagcccac atggggccca   660

gggagagggt cctgcctgtc tgggcgggcc ccttggtggg ccctggaggc tccagtctca   720

gggagaggaa agcctggtct gccttgacac cctcactcgc gtctccgggg tctccagggc   780

ctggcccagg cttcccaggg ctgcgctgtg cttccttggt ttctggaatc ccttgcagat   840

gacagacaag agaaacgggc ctattgatgt ctagcccgtg tgttgtttac tgttcctgga   900

gtgagtggtg aaagccctg cgacgattgg ttcagaggat aaggcctcac ctggagagta   960

tgtcttgttt actccgatga ggcctcacct ggagagtgtg tctggtttac tccaatgagg  1020

cctcacctgc agcgtttgtc tggtttactc cgatgaggcc tcacctgcag cgtttgtctg  1080

gtttactccg atgaggcctc acctgcagcg tttgtctggt ttactccagt gaggccttac  1140

ctgcagcgtt tgtctggttt actccgatga ggcctcacct gcagcgtttg tctggtttac  1200

tctgagcctc acattccttt cagtcgctcc gtgaatcact gtctttggtg ggtcaggagg  1260

aatccactcc ctgggcctgg gcctggacca gtgctggtca gacctgctgt gtggggcctg  1320

gggacgcttg caggtgtgga ctggcagctc atcaggaaga gctggggaag gcgtgagacc  1380

aagacagcct ccggcctgga gaaggcgtga ggcctaggca gccacatggc tggggacagc  1440

gtgaggccca ggtagcctct gagggttggg ggaggcatga ggtccaggca gcccctgagg  1500

gctggggagg cgcaaggtcc aggcagcctc aggactgggg aggcgcgagg tccaggcagc  1560

ctcaggactg gggaggcggg agggccaggc agcctcagga ctggggaggc gggagggcca  1620

ggcggcctct ggtgccgctg cgttgctcct gtgcagcctc gggggggcccc agggcatctg  1680
```

```
gaggcatctg tgagcgtgtg ggctgtccca gctgacgtgg gtcctttgct ccacaggcca   1740

ccagcttggg ctccccacgg agggcagcaa gtgggacttg gggaacccgg ctgtcaacct   1800

gtccacggtg gcagtgatgc ccgtgtcaga ggaagtgccc ctcaccgcct tcgccctgga   1860

gctggagcat gccctcagcg ccatcggccc gaccctgctg ctgactagtg acaacataaa   1920

acggcgcctt ggctccgctg ccctggacag tgttcacgag taccggctgt ccagctggct   1980

ggggcagcag gaggacaccc acaggatcgt gctctaccag gcagatggca cgctcacacc   2040

ctggacccag cgctgcgtgc gccaggccga ctgcatcctc atcgtgggcc tggtgaccag   2100

gagcccacag tgggcgagct ggagcggatg ctggagagca cagctgtgcg tgcccagaag   2160

cagctgatcc tgctgcacag ggaggagggc ccggcgccag cgcgcaccgt ggagtggctc   2220

aacatgcgga gctggtgctc cggccacctg cacctctgct gcccgcgccg cgtcttctcc   2280

aggaggagcc tgcccaagct ggtggagatg tacaagcatg tcttccagcg gccccccggac  2340

cgacactcag acttctcccg cctggcgagg gtgctgacgg gcaacgccat tgccctggtg   2400

cttggggggag ggggagcaag aggctgtgcc caggtgggcg ttctcaaggc cttggcggag  2460

tgcggcatcc ctgtggacat ggtgggaggc acgtccatcg gggccttcgt gggtgccctg   2520

tactctgagg agcggaacta cagccagatg cggatccggg ccaagcagtg gccgagggc    2580

atgacgtcct tgatgaaggc cgcgctggac ctcacctacc ccatcacgtc catgttctcc   2640

ggagccggct tcaacagcag catcttcagc gtcttcaagg accagcagat cgaggacctg   2700

tggattcctt atttcgccat caccaccgac atcacagcct cggccatgcg ggtccacacc   2760

gacggctccc tgtggcggta cgtgcgtgcc agcatgtccc tgtccggtta catgcccccct   2820

ctctgtgacc cgaaggacgg acacctgctg atggacgggg gctacatcaa caacctccca   2880

gcggatgtgg cccggtccat gggggggcaaaa gtggtgatcg ccattgacgt gggggcagccga  2940

gatgagacgg acctcaccaa ctatggggat gcgctgtctg ggtggtggct gctgtggaaa   3000

cgctggaacc ccttggccac gaaagtcaag gtgttgaaca tggcagagat tcagacgcgc   3060

ctggcctacg tgtgttcgt gcggcagctg gaggtggtga agagcagtga ctactgcgag     3120

tacctgcgcc cccccatcga cagctacagc accctggact tcggcaagtt caacgagatc   3180

tgcgaagtgg gctaccagca cgggcgcacg gtgtttgaca tctgggggccg cagcggcgtg   3240

ctggagaaga tgctgcgcga ccagcagggg ccgagcaaga agcccgcgag tgcggtcctc    3300

acctgtccca acgcctcctt cacggacctt gccgaaattg tgtctcgcat tgagcccgcc    3360

aagcccgcca tggtggatga cgaatctgac taccagacgg agtacgagga ggagctgctg     3420
```

gacgtccccca gggatgcata cgcagacttc cagagcacct cagcccagca gggctcagac　3480

ttggaggacg agtcctcact acggcatcga caccccagtc tggctttccc aaaactgtct　3540

gagggctcct ctgaccagga cgggtagagg cctctgctaa agagcccgga tgcagcgtct　3600

tccgtgggac tgtccccaag gctgaggctc ctgccaagtc ctaggggcct ctgtacctgc　3660

cctgctggaa gccctgactt ccccgggggcc ccaggctgtg ttagggttct ctgggcctct　3720

tctttgtacc agcagccctg catacagggc cctgtgagcc cccctgcagt cctgtgaggc　3780

ccctgaagct ctgtgaggcc cctgaagctc tgtgaacccc ctgcagccct gtgaggcccc　3840

ccgaagccct gtgaggcccc ccgaagccct gtgaaccacc tgctgccctg tgaggccccc　3900

aaagccctgt gaactgcctg ctgtcctgtg aactgcctgc tgccctgtga ggtgtgggag　3960

ccctgatgct gccgtgtgat gtttcaataa aggtggatct cactgtt　　　　　　　4007

<210> 618

<211> 4371

<212> DNA

<213> Homo sapiens

<400> 618

aaaagtctga gccccgctcc gctgatgcct gtctgcagaa tccgcaccaa ccagcaccat　60

gcccatgact ctggggtact gggacatccg tgggctggcc cacgccatcc gcttgctcct　120

ggaatacaca gactcaagct atgtggaaaa gaagtacacg ctgggggacg gtaatggcac　180

cctcgtgtcc gggccctgcc cactcacgct gagttggcac caagcaaccc atggtggcca　240

cctgtggctg cctctgcagg cctcccctgc tggagctgca ggctgtccct tccctgagct　300

cccgtgagtg agccctctgg ccttgcaagg cagaatgctg gggcgggatg ctggacaccc　360

tgtctaattg ggttgggtgt ccctcagagc ttccctaaac cctggaagcc ttagccgttg　420

tggggtccag agccctcagt gggattcttt ctccctgaac cctgggatgt gggactgagt　480

ggtcagattc tagatccacc tgtctcaggg atcttgccac tggctccttg ggagggtccc　540

cgggaaggag ggctgggctc tggggaggtt tgttttcact tcttccccac cacagctcct　600

gactatgaca gaagccagtg gctgaatgaa aaattcaagc tgggcctgga ctttcccaat　660

gtaggtgcag gggaaggggc ggttttgggg gaaagtgcga cgtgtctctg actgcatctc 720

ctctccccac cttagaggtg ttaagatcag gagtcttctg cccaattcct ctcactcttg 780

gctgtctaca cagcccttgc atgatgttct gtgtcccagc tcatttatta gtgtgacagt 840

atttctatct caggcctgcc atgagcaggc cctggtctcc tctctgccct tgcatatggg 900

aaggggatgc tggggagcct ggtggcccaa ctgagcttcc ccggtttccc atctatccag 960

ctgccctact tgattgatgg ggctcacaag atcacccaga gcaatgccat cctgcgctac 1020

attgcccgca agcacaacct gtgtggggag acagaagagg agaagattcg tgtggacatt 1080

ttggagaacc aggttatgga taaccacatg gagctggtcg gactgtgcta tgacccagat 1140

tttgagaaac tgaagccaaa atacttggag gaactccctg aaaagctaaa gctctactca 1200

gagtttctgg ggaagcggcc atggtttgca ggagacaaga tcacctttgt ggatttcctt 1260

gcctatgatg tccttgacat gaagcgtata tttgagccca agtgcttgga cgccttccta 1320

aacttgaagg acttcatctc ccgctttgag gtgatgcccc atcctcctt tctctttgat 1380

gccccttgtt cctttctctc ctttcagatg ctttcccagt cctggagcta cacaaagaat 1440

aactcgtatg tattgagtac gggcttcatg ccaggaatca tgcccagcac attataccta 1500

tcgtgtagaa tttgaaattt ccaacattcc tacagggtga cagaattatc ttgcccattt 1560

tagagataag aaaactgaga atgagagggt cagtcctttg ctcagggtcc cagagccagt 1620

ggaggctgtg ctgggctccc tgtgagcctc tggatctatg ggtggcagtc agggctctcc 1680

catttgtgac aaaaggagaa gcctcaggcc tcatccagcc tgggtttcac agcccagaac 1740

actttgaaag aggcagagca cttcaggacc acggatgcag ctggcaatag taggactgac 1800

acacagtggc attgatgttg agtactaaac ctgcaggcag tattcatagc cacccccaga 1860

agctttgcat gatcggaccc ccatgtggag aatcctgaga tccggagctg tggctggagc 1920

tggattaggg tacatatgtg ggtgcccctg ttgaagcagt gtgtgttgaa gtgctctgtg 1980

ctggggcact ctccttcttt atctttcttc ctctcttttt ttccctccaa tgttccacgt 2040

cttcccccctg tgagatgagt agcacactga ttttactcct attcaccgac cttctcctct 2100

gcatgaggca gggtgtgagg cacagtggga gttgcataga tgactgcccc atcctggaaa 2160

tgagtgcagt gagaggcctg caggcagagc agcctgtgag gtgtgtgtgg caccacctgg 2220

gtaccgggcc tggggcctgc ccctcactca cggggaacca tccctcacct gtgttgaagt 2280

tgtttgagag cagcaaatcc tactttagta cagatttggg gatttgaggc attagtccaa 2340

caggcttctg agcctagaat ctgtttccct ttcccactcc ccatcaagaa atctgcttgc 2400

tcagctagtt cccatcagct ctggttctgg tccagcctga gcagccttgg ggttatgtaa 2460

gaggtggtgg gaggggagcg gtggggaaca gccgagggct ggggcatgga gcctgcctgg 2520

gcctggccct ggccctttgg ggagagggag ccctggatct ctttgaattc tttagaagtt 2580

acatggtcat tgaatcctgg taagattgtg tgcagcacac ctgagtgtca tgtggcctgg 2640

ctagcagtag tagggctgga gatgtgatgg gggcacaggg acatagggag atttagctca 2700

ggtaccaggt ggagaagttt ggactttatg ctttaatggg aatgattaga gcctggtctg 2760

gccttccttt ggtggttcac ccttacccta ttcagtttca tccaggtttt gctaagtcat 2820

tgggtgagat ctgtgctctc ttcttggctg cacaggtgtg ttctgagccc ctttgttctg 2880

ctggaggtcc tttctgtgtg tgcaatccta ggcaagccaa gaacctccct gtgaaaaagg 2940

agaatgtttg tgccgacaag gagtgacagg atctggcatg gggtgtggct gggtggaaga 3000

ggaggagaat ttggcaaaaa catgctagaa ctgaagacag aaccaggcta tattccagcc 3060

ctgtcccact tactagctat ttgagtgtga ggaagttgct gaacttctgt tcttctatat 3120

gagaaacggt gataatagaa ctgaccatgg agggtagtcg agtggatttt ctaagcctgt 3180

gttgtaattt ctgttggata taaagcaccc agcacagtgt agatctttcg taaatggtag 3240

ctgttattat ggtataacat tacttaaagg aagttggaag agttaactta gaagagctgg 3300

ggacctaaga gaccgtgtga tgctccagca cttgagccca catggaaagg ctgtggccag 3360

ggccctgacc tgctgtgcct gcagcaaagc tacttgagcc cttctagaca gcagacctgg 3420

ctctggcccc ttcttcccgc cctcagggtt tgaagaagat ctctgcctac atgaagtcca 3480

gccaattcct ccgaggtctt ttgtttggaa agtcagctac atggaacagc aaataggggcc 3540

cagtgatgcc agaagatggg agggaggagc caaccttgct gcctgcgacc ctggaggaca 3600

gcctgactcc ctggacctgc cttcttcctt tttccttctt tctactctct tctcttcccc 3660

aaggcctcat tggcttcctt tcttctaaca tcatccctcc ccgcatcgag gctctttaaa 3720

gcttcagctc cccactgtcc tccatcaaag tcccctcct aacgtcttcc tttccctgca 3780

ctaacgccaa cctgactgct tttcctgtca gtgcttttct cttctttgag aagccagact 3840

gatctctgag ctccctagca ctgtcctcaa agaccatctg tatgccctgc tccctttgct 3900

gggtccctac cccagctccg tgtgatgccc agtaaagcct gaaccatgcc tgccatgtct 3960

tgtcttattc cctgaggctc ccttgactca ggactgtgct cgaattgtgg gtggttttt 4020

gtcttctgtt gtccacagcc agagcttagt ggatgggtgt gtgtgtgtgt gtgttggggg 4080

tggtgatcag gcaggttcat aaatttcctt ggtcatttct gccctctagc cacatccctc 4140

tgttcctcac tgtgggggatt actacagaaa ggtgctctgt gccaagttcc tcactcattc   4200

gcgctcctgt aggccgtcta gaactggcat ggttcaaaga ggggctaggc tgatgggggaa   4260

gggggctgag cagctcccag gcagactgcc ttctttcacc ctgtcctgat agacttccct   4320

gatctagata tccttcgtca tgacacttct caataaaacg tatcccaccg t   4371

<210> 619

<211> 3578

<212> DNA

<213> Homo sapiens

<400> 619

cttaaagcgg gcgcagcatt aacgcttccc gccccggtga cctctcaggg gtctccccgc   60

caaaggtgct ccgccgctaa ggaacatggc gaaggtggag caggtcctga gcctcgagcc   120

gcagcacgag ctcaaattcc gagatgaaca tgttgaacca acaaatgaac ctcctcagga   180

cttctgatgg gattgggccc attttccttt cactgcgtcc ctcatgctgt ctcctggttg   240

cggcgcaagg aggctgccac ggtgctggga tcctttttct ccgcagagct gtctggagca   300

acacctgcgg cgatgggaag ccatgaccct ggtttctccc agatactatt acctctgtcc   360

cttcaccgat gttgtcacca ccaacctaaa gcttggcaac ccgacagacc gaaatgtgtg   420

ttttaaggtg aagactacag caccacgtag gtactgtgtg aggcccaaca gcggaatcat   480

cgatgcaggg gcctcaatta atgtatctgt ggaaggaggc aaaaccggaa gaccttatgg   540

attcaaaact tagatgtgtg tttgaattgc cagcagagaa tgataaacca catgatgtag   600

aaataaataa aattatatcc acaactgcat caaagacaga aacaccaata gtgtctaagt   660

ctctgagttc ttctttggat gacaccgaag ttaagaaggt tatggaagaa tgtaagaggc   720

tgcaaggtga agttcagagg ctacgggagg agaacaagca gttcaaggaa gaagatggac   780

tgcggatgag gaagacagtg cagagcaaca gccccatttc agcattagcc ccaactggga   840

aggaagaagg ccttagcacc cggctcttgg ctctggtggt tttgttcttt atcgttggtg   900

taattattgg gaagattgcc ttgtagaggt agcatgcaca ggatggtaaa ttggattggt   960

ggatccacca tatcatggga tttaaattta tcataaccat gtgtaaaaag aaattaatgt   1020

atgatgacat ctcacaggtc ttgcctttaa attacccctc cctgcacaca catacacaga 1080

tacacacaca caaatataat gtaacgatct tttagaaagt taaaaatgta tagtaactga 1140

ttgaggggga aaagaatgat ctttattaat gacaagggaa accatgagta atgccacaat 1200

ggcatattgt aaatgtcatt ttaaacattg gtaggccttg gtacatgatg ctggattacc 1260

tctcttaaaa tgacacccct cctcgcctgt tggtgctggc ccttggggag ctggagccca 1320

gcatgctggg gagtgcggtc agctccacac agtagtcccc acgtggccca ctcccggccc 1380

aggctgcttt ccgtgtcttc agttctgtcc aagccatcag ctccttggga ctgatgaaca 1440

gagtcagaag cccaaaggaa ttgcactgtg gcagcatcag acgtactcgt cataagtgag 1500

aggcgtgtgt tgactgattg acccagcgct ttggaaataa atggcagtgc tttgttcact 1560

taaagggacc aagctaaatt tgtattggtt catgtagtga agtcaaactg ttattcagag 1620

atgtttaatg catatttaac ttatttaatg tatttcatct catgttttct tattgtcaca 1680

agagtacagt taatgctgcg tgctgctgaa ctctgttggg tgaactggta ttgctgctgg 1740

agggctgtgg gctcctctgt ctctggagag tctggtcatg tggaggtggg gtttattggg 1800

atgctggaga agagctgcca ggaagtgttt tttctgggtc agtaaataac aactgtcata 1860

gggagggaaa ttctcagtag tgacagtcaa ctctaggtta cctttttaa tgaagagtag 1920

tcagtcttct agattgttct tataccacct ctcaaccatt actcacactt ccagcgccca 1980

ggtccaagtc tgagcctgac ctcccttgg ggacctagcc tggagtcagg acaaatggat 2040

cgggctgcag agggttagaa gcgagggcac cagcagttgt gggtggggag caagggaaga 2100

gagaaactct tcagcgaatc cttctagtac tagttgagag tttgactgtg aattaatttt 2160

atgccataaa agaccaaccc agttctgttt gactatgtag catcttgaaa agaaaaatta 2220

taataaagcc ccaaaattaa gaattctttt gtcattttgt cacatttgct ctatgggggg 2280

aattattatt ttatcatttt tattattttg ccattggaag gttaacttta aaatgagccc 2340

tatcactgag aaatacgtgt ttcatgattt aactctgtgt gtgtgtgtgt gtgtattttt 2400

tttttggttg tcttcagctg acagtatgaa aaatgaaact gctgaaaaag ctgagcacct 2460

ggtcacccct ggccttccat tgctttggcc ttcagtaaaa agcagcctcc cttctaggtc 2520

agggaaccat gccattgaga ctagtaacgg gcgttctggg cacagtccca ctgcgcacag 2580

gtttgagagg acaagttcat cagaaggaag gcagtcctta gaagtcacat acgttgagcc 2640

acgttgctcc taagcctggc tctgtcaagc tgggtcaggg gccttgaaac tggagaagtg 2700

gaagtctatg gttggtctga gtaagtaact tcctgtcttc atgaaaaaag ttgactttga 2760

```
atcccaggta ctcacagaaa tggtgaacag acttagttgt tacccaggca cccatggatt   2820

gtgttgagtg tgcagacagg gaggccaccc cataggaat tcgtctccag gattttccc     2880

atgtgtcccc cagtacttat aaaagggagt gaaaagaccg agctgtaagg catgtgcctt   2940

ctgccacctg actttccgtg aggggactaa aatttactaa ttgtagttgc tgcagccagt   3000

taagtcctgt agcttccagg ccctcatgtc tttgatagga gagtgcttag gtggtcccca   3060

acagtgccta ggggtacagt acagtcccat tacactagag cagggctcta tttattttta   3120

aaggatatgg ccgtgtgttt tgataaaact ttattcacaa aaacagccgg gtcatgggat   3180

ttggcttgtg agtctgtaac agttcttaaa aagaatatct gagaaactac tctgttttag   3240

acctttgaag gtgatttaga gttttgtgta catctaggag aaggtgttca gcttctcaga   3300

ggatgtggac attttggttg cagctaaaaa tcagtctctg aagtctctct cccttctaga   3360

ggttaggact tggtgaacat gtttgtgggc cttttgactg agtggcagaa ggaaactgct   3420

caggaagaga aacaggtgac tgatgggaag gttgattatt ttctcagtca tcctggcagc   3480

caaaaatgtg ccaggaaaag aaagaatgtg gagcacgcgt ggctcctgga ggacttggag   3540

atgcatgcac atttagggtg ttttccctag aattacat                          3578
```

<210> 620

<211> 4759

<212> DNA

<213> Homo sapiens

<400> 620

```
atttgcccca gctaagcagc gagagcttgc tgaagcccag agggctgtgg gaccatgagg   60

gcagctctct ggaccctggg actcgggccc cttcttctga atctctgggc agtccccatt   120

ggtggaccag gtgctctgag gctggcgtac agacacagca cgtgcgacgg agtggtgttg   180

gtccgacacc acggggcatg gggatacgtg tgcaaccagg agtggacgct ggcagaggcc   240

tctgtcgtgt gcaggcagct gggctgcggc cctgccgtgg gcgcccccaa gtatgtcccg   300

ctgcctggag agatggccca gccctggctt cacaacgtgt cctgccgggg caacgagtcc   360

tccctctggg agtgcagcct tggctcatgg tgccagagcc cgtgcccca cgcatgggtg   420
```

gtggtcgcgc tgtgctccaa cggcactttc cgggagctcc ggctggtgaa gggccgcagt   480

ccctgcgcgg gactccccga gatcagaaac gtcaatgggg tggaccgcct ctgtgtcctg   540

catgtggagg aggccatggt gttctgccgg gagctggggt gcggccctgt gctccaggcc   600

ccccgccggg acgtgggcgt cgtcaggaag tacctggcct gcaggggtac cgagcccacc   660

atccgcagct gcagactgga caacaacttc cgcagcggct gcgacctgcg gctggacgca   720

gaggtggtct gctcaggtga ggctgccacc tgatgttccc agtgaccctt gggatgatgc   780

tgggcccgga cctggggagg gcagggagaa ggggggtggg cgttcccacg gatgggcccc   840

cctgtcctgc atgagacatt gggcgcagag gtgggaaagg gcctcagctc tcacgctggt   900

tctcagcaga gtggagctga gtttctggtg gccccacaga ggtgtcctgg ctcagaaccc   960

gcaggccatc taggggtcct ggctgccgct gcaagtctga gctgcctcag ctgtgatctc   1020

tgcatgtcta acatggatcg gggttgggta gaggtcactt cttcccagcc ctgcctcaac   1080

tgtgtgtgag ctgcactggc ctcacagctc ctggccttgt tgtgcatatg aggagcagct   1140

gaaatgaggt ggatagtctg cctgctgcgg taccccagag agggtggtgc tcagtggacc   1200

aaggggtgcc ctgacctcgc ctctgggatt gcagagggtg ttgctgtcat ggccccggac   1260

aggcagaggc tgtgaaatac gtgagcacct gcagcaggtg accctgaccc tgaccttggt   1320

gatgcggcca aggacgtctg ctctgctctg ggtgccgggt ggaagggcct gtggctgcaa   1380

gttcctgcct gtgcttggta gaccctctgc ctagatgcag gtgatggctc ctggctgaag   1440

ccttctgcag tctgaggctc agggccaggc tgttgacctg agaacacctg tctcctgcct   1500

gagaggacgt ctgcccccag gacacaccga ggcccgactg gtgggcggcg agcacccctg   1560

cgccgggcgc ctggaggtga cctggggcac cgtctgtgat gcggccctgg acctggccac   1620

ggcccacgtg gtgtgccggg agctgcagtg tggggcggtc gtgtccacgc ccgagggcgc   1680

ccgcttcggc cggggctcgg ggccggtgtg gacggaggcc ttccgctgtg cgggcaacga   1740

gtcgctgctg ttccactgcc cacggggggcg tgggagccag tgtgggcatg gtcacgacgc   1800

ggggctcagg tgctcagagt tcaggatggt caacggcagc agcagctgtg agggccgcgt   1860

ggagttccag gtgcaggggt cctgggcacc cctctgtgcc acccactggg acatagcaga   1920

tgccaccgtc ctctgccacc agctcaactg tggcaacgcg gtggccgcac ctggaggagg   1980

ccattttggg gacggggacg ctgccatctg gcctgatgcc tttcactgtg aggggacaga   2040

gtcctacttg tggaattgcc cagtaagcac cctggggggcc ccggcctgtg ccccgggaaa   2100

cacagcctcc gcggtctgct caggtctggc ccacgccctg cgactgaggg aaggacagag   2160

ccgctgtgac ggccgcgtgg aggtctccct ggatggcgtg tggggccgcg tcctggacga 2220

tgcctgggac ctgcgcggcg cgggcgtggt gtgccggcaa ctcgggtgca gaggggccca 2280

gcaagcctat gacgcacctg cccccagccg cggatccgtc caggtggcgc tgagccgcgt 2340

gcgctgtctg ggcaccgaaa cccgcctgac tcagtgcaac gtgtccgcga ccctgcagga 2400

gcccgcgggg acctcgcggg acgccggcgt ggtgtgctcc gggagcctca gggtgcggct 2460

ggccgcgggg ccggggcgct gcacggggc gcgtggggca ccgtgtgtga cgatgcctgg 2520

gagctgcggg acgcgcacgt ggtctgcagg cagctgggct gtggccgcgc cctgagcgcc 2580

ctggggggccg cacacttcgg agccggggca gggcgcatct ggctggacga gctgggctgc 2640

cagggccacg agtctgcgct gtggcagtgc ccgtcggcgg gctgggggcg cacgactgg 2700

aggcacaagg aggacgccgg cgtcttctgc tcaggattgt cagaggacag gccacaggct 2760

gctggggagc ccctcaactg ctcctcctgg ctcggctgcc cagaggaggg cgcactgcgc 2820

gtgcgcgggg gcgaggaccg ctgctccggg cgcgtggagc tctggcacgc gggctcctgg 2880

ggcaccgtgt gcgacgatgg ctgggacctg gcggacgcgg aggtcgtgtg ccgccagctg 2940

ggctgtggtc gggccgtcgc cgccctgggg gccgccgcct ttggccctgg ctccgggccc 3000

gtgtggctgg acgaggtggg gtgccggggc agcgaggcgt ccctgtgggg ctgccctgcg 3060

gagcggtggg gacgcggaga ccgcgcgcac gaggaggacg cgggcgtgcg ctgctgggag 3120

cctggcccag gcccccact gcctgcagct cccttccgga cattctgggt ggtcagtgtc 3180

gtcctgggag cccttcttgg tcttctcctt ctgggcctca tggctttct gattctgcct 3240

cgagtcacac aagccatgca gaggggtctg ggaagatccg aggtatctcc tggagaagcc 3300

atctatgatg tcattgggga aatgccgcta gcaggactgt acgaggaaat catggaggcc 3360

gaggctgtgc tccaagatga ggaggacgga agtgtggtga aggtggacac agaagccgca 3420

gtttcagggg aggtgtctaa cctcctggag ggacagtcta tacgtgcgga gggaggacac 3480

agcagacctg tttctcaggg atatgacgag gctgcgtttc ctctggagga gatgacgttg 3540

taaagcaacc tgaggatgag atacaccagc tggctgtcga aatcacagct cttcattttc 3600

ttgtacaatt gtagtggatt tcgtgagaac accttggatg cctttctctt gcaatgtcct 3660

ccatgtccat gtaaaatcca gtccttccag gccctgcctg gctctaaacc tcatcccctt 3720

cgagggccat ctgctgtgga cagttgtgct gtgtaacctt cagatttccc acacattaca 3780

gcaaatgcaa atacacatag aaatcagtgg ttccatttgt ggtttagaga cacatggtgc 3840

catcttcatc ttccgctcca cagctcgctt ctggcaccca gcagtgggtt gcagagctcc 3900

```
ccatgccaga accttcctct ttttttctta aaaactcttc ttaattgaat ccaaagtatc    3960

ttttaaatgt tctacttgtg taatcatgtc atctgtgaat attcagattt atcttctcct    4020

tccaatccgt gtacatttaa tctctttttc tgtgccttat ttcgggggct gggaccttc     4080

agtccagtgt tgaagagagg cagccagtgg aggtcttgtc tcattcaagg actcagagca    4140

aatgtgttcc acatttaatt tcactatgaa atataatatt tgatgttcag ttttgtagat    4200

gctatttatc agatcaagga aagcccagtc tatacctaat ttgttaaggg ttttgctttt    4260

tatcataagt gttgactttt atcaaattct tttttgtatc tattaagatg atagatgatt    4320

gattttcata tgttaaatta accatgggtt aaacaaactt acctttatca tgatatatta    4380

ttctttttgt atttcacagg aattagtttg gtaatatgtt gggtcaatgt ttaaaaaaga    4440

aaatgatgtg taattttttt cttttattgt agtatttctg tttaattttt ggtatgagga    4500

ttattcaggt ctcataagag ttaggagtat attctctttt aaaaaatatt tgctaattta    4560

cactcccacc aacagtgtaa aagtgttctt atttctccac atcctctcca gcatctgttg    4620

tttcctgact ttttaataat cgccattcta actggcatga gatgatatct cattgtggtt    4680

ttgatttgca tttctctaat gaccagtgat gatgaacttt ttttcatatg tttgttggct    4740

gcataaatgt cttcttttg                                                 4759
```

<210> 621

<211> 4231

<212> DNA

<213> Homo sapiens

<400> 621

```
ttctagtctg ggccagcatc tccagggctg ggcataggct cttggcagag ctttcctttc    60

agtatctttt ctgctgactt ggagtgaggc cacgtacatg gacctgggga cggggtccag    120

gaggtatcca ggaaggagaa ctggctcctg gccgcacag gatgggagca cggggccaga     180

gggcaggaca gtctcggcct gtgccaaggc tctgagggct aagaaggcca cgggagtgaa    240

ccagagccac cctgggggagg ccagggcagg tgcagcagag gcaaggaacc ttccccaggg    300

tgccacagga ggcagacagg aggcagaggg ctgtcctcag gcaggtgccc caggggagca    360
```

```
gaggagcagc cagagactgc atgtattagg gtgggggagtg gggacaaaag cctggggtcc   420

tggggctcac cagggaaagg ggagctgagg ctctctgggg agctctgctt taaaggggca   480

cagaaacccc agggtgtgag gactgggtgg ggacatgtca gcagcatggc caggcagcca   540

agggatcaga gcctgctgtt ttagggggtg agagtaggat gatgacaggg gcagggctca   600

ttctccatat tggggtcctg gagggtccag gctcacaacc aaggtccttt ggccaggggt   660

agatggggtt gaacctctgg cacctactct ggaggcatct gccctgggcc tgctgagtgc   720

atggaggctg gtggcccggc atgctgacag ttctcctggc cctgcagatc ctggcagccc   780

tggagaagga tgagcaggcg cggcggcagc ggctgcggag caagctggag caggtggtgg   840

acacgatggc cctgagcagc tgagccccag ctgtgatcat ccagcatgat gcagcgtgag   900

gacagctgag ctgggaccgg gacagccctc accgcatgcg tgtggagtgt ccggtggtgc   960

tcgggccgcc gcagtgcagc gactgcccgg ccctccctcc cctgcctcac ccggtcgggt   1020

cccggctctt cctgtgtgga ggtgatggta cctgccacac cacagctgcg cacacagctg   1080

cttgctcagg ggccgggaca gcactgggtg ctcaggctgg ccaaggacct tcattgcctg   1140

gcaagagctg cccagtggcc ttcatgggag aagggctgac ctctgagggg ctgaggggtg   1200

aggccagggc cctccagggg gaggggtagc cagcttgggc tgtccccttg agaccaggac   1260

aagaggctgg gggtgtcagc attcccagct ttccaagctg cccccaggcg gcagagtctg   1320

agggtcccgg ggcccggttg gcagctggag aaagaggcaa aaagcccgta gccgggcaag   1380

aggagctcaa gtcggtctgg gcccgttgcc accgactccc acctccagca cccatgcccg   1440

ctgcaccgct gccatcctca gattcaccgc gtgctctgcg cggccgaggc cggagcacca   1500

catccacctc gccccagaga ggctctgctc cctcctatgg aggggctgtg ggccaggctg   1560

ctcagactcc tgggtggctt ccagacggac cgggcagccc ctctccgtcc tcagggctgt   1620

gcctctggga gccactgggc caggggcccc gggtcgcaga gagcacgttc ccgttatta   1680

ttcccctccg cgtcctacac aggctgccct ggcagctgtc ttcaagggta ggctgagctc   1740

cccaccctgg agcccctgag ggcggcccct gagcactcct ctctctccac tctctctgtc   1800

cctgccccag cggcttccag tgtggcatct cagcagtgtc ctggcccctc cagagcagtg   1860

ggacatctgg ggactgtttt tgtgtttagg ggaaaaaatt ctgctgcact ctgcttgggc   1920

cttgaggtct gtggcagggc tcctctggcc cgcagtggcc tggatctatc tgggccatga   1980

gtgacgggca gtgaccagag ggactggagg ccagcggtgt ccacccttgc cctcagcaag   2040

agagaatgca ttcttaaaag aaagctgtac atgtatatat atgcatatat atatatgtgg   2100
```

ctctagcctc aggctccagc cccagtgggg tactgtacag ttaactgaag aagaatttta 2160

aagacgattt gaacaagaaa atgaaggcag tgggaaagca atgccaaatg gttgtggaga 2220

aagtggccgg agcctccctg gagtggagca gccctgaagc ctgtgccccc cgacctgcgg 2280

gccgctgttt tggtttgaca tgacaaggaa aggacttcct gctgaccctg agagcctctg 2340

gggtgccgcg gcaccacggg gcatgcatga ttgtgctagc gtttagtctg agttgatctt 2400

tttaaaactg caagtgttga atactagagg ttgttagacc ctttttttatg ttttttaact 2460

aatcagtcac ttgtaaaagc aaacaagcgg tccatcccct tttcaaggtc actttttttga 2520

tggtaccgaa gatcccatgg acattaaggg acagctaact gtggccagac tcagccccat 2580

gtccttggcc aggcccaagg agaggactcg gccccatggg gtgtgccagt cttgcagtcc 2640

gccccacctg agtagcgtga gccagatgac gccacagaga cccgcctctt ccctgaacgc 2700

gggtcggtgt ggaatcagtg actgctgact cagggagctc cttggccccg tgggcactgt 2760

gccagggctg gggccttctg ctgctgccac acccagctca ggcctgggcc agcccctgcc 2820

cccagcccac tgaggggggtg ggcttactcc ctgggcagtc ttggggggcca gagctgaggc 2880

cagtccatat tacagtggct gggctgtttt tttcagtagc ccctagcatt ggctgggatt 2940

cctgttcctg ggtgcgcctc cacctccctt ctgatgtttc ctggctatgg tggggtggga 3000

acctcagttt cccccaaagt cttccctgga tgctggcttc aggttgaagt ccctggttct 3060

tccagttcct cacgggttag gtaggggctc ctgcatcacc ttcagaatcc agttccaacc 3120

cccactctcc ttaggctttg tgctctgctc tgccctgcca ggctgccctt gtccatgtga 3180

gtagcatggg cgggtggtgg ggacggcagt ggtgatgaag ggggtgcacc acaggcctca 3240

tgaagcagtt cccacatggg cgtgtggctg gggcgtggcc accacagagc acatggctgt 3300

gtctaggcgc aagcacttta gcagtatctg tttacatgcg caaggatcaa gccgactacc 3360

tgtgctgtct actgggacag cagtctccga gctactccgt acctccctct gccaggtcgt 3420

ggagttaggc cccagtccct acttgtcact ggttcccact gtgctcctaa ctgtgcagca 3480

cctgggagct ctggcctggg gctggaggcc ctggtaggag ctgcagttgg aggccgttct 3540

gtgcccagca gcggtgagcg gctcccatgg gccctgtgtc tgcagggagc cagggctgcg 3600

gcacatgtgc tgtgaaactg gcacccacct ggcgtgctgc tgccaccact tgcttcctgc 3660

agcacctcct accctgctcc gtgtcctccc tctccccgcg cctggctcag gagtgctgga 3720

aaagctcacg cctcggcctg ggagcctggc ctcttgatat acctcgagct tcccctgtgc 3780

tccccagccc caggaccact ggccccttgg cctgaggggc tgggggcccc acgacctgca 3840

gcgtcgagtc cggggagagag cccggagcgg cgtgccatct cggctcggcc ttgctgagag　3900

cctccgccct ggctttctcc ctgtctggat tcagtggctc acgttggtgc tacacagcta　3960

gaatagatat atttagagag agagatattt ttaagacaaa gcccacaatt agctgtcctt　4020

taacaccgca gaacccctc ccagaagaag agcgatccct cggacggtcc gggcgggcac　4080

cctcagccgg gctctttgca gaagcagcac cgctgactgt gggcccggcc ctcagatgtg　4140

tacatatacg gctatttcct attttactgt tcttcagatt tagtacttgt aaataaacac　4200

acacattaag gagagattaa acattttgc t　　　　　　　　　　　　　　4231

<210> 622

<211> 4218

<212> DNA

<213> Homo sapiens

<400> 622

acgggcagcc gttaggggcg gggtctgcag ccgcccgcgc gcggctcgcg ccctcccctt　60

tgtgtcgcca tggcggcggc agcggcgacg agaacggcga gcgaggggtc gagcgcggcc　120

ggggcctgag gaggctacgc gaccatggtg gctctcagct cctcgaggcc ccttcccgcg　180

gctggctgac tgcgcccatt tccactacga gaacgttgac tttggccaca ttcagctcct　240

gctgtctcca gaccgtgaag ggcccagcct ctctggagag aatgagctgg tgttcggggt　300

gcaggtgacc tgtcagggcc gttcctggcc ggttctccgg agttacgatg actttcgttc　360

cctggatgcc cacctccacc ggtgcatatt tgaccggagg ttctcctgcc ttccggagct　420

tcccccgccc cccgagggtg ccagggctgc ccagatgctg gtgccactgc tgctgcagta　480

cctggagaca ctgtcaggac tggtggacag taacctcaac tgcgggcctg tgctcacctg　540

gatggagctg gacaatcacg gccggcgact gctcctcagt gaggaggcgt cactcaatat　600

ccctgcagtg gcggccgccc atgtgatcaa acggtataca gcccaggcgc cagatgagct　660

gtcctttgag gtgggagaca ttgtctcggt gatcgacatg ccacccacag aggatcggag　720

ctggtggcgg ggcaagcgag gcttccaggt cgggttcttc cccagtgagt gtgtggaact　780

cttcacagag cggccaggtc cgggcctgaa ggcggatgcc gatggccccc catgtggcat　840

cccggctccc cagggtatct cgtctctgac ctcagctgtg ccacggcctc gtgggaagct　900

ggccggcctg ctccgcacct tcatgcgctc ccgcccttct cggcagcggc tgcggcagcg　960

gggaatcctg cgacagaggg tgtttggctg cgatcttggc gagcacctca gcaactcagg　1020

ccaggatgtg ccccaggtgc tgcgctgctg ctccgagttc attgaggccc acggggtggt　1080

ggatgggatc taccggctct caggcgtgtc ttccaacatc cagaggcttc ggcacgagtt　1140

tgacagtgag aggatcccgg agctgtctgg ccctgcattc ctgcaggaca tccacagcgt　1200

gtcctccctc tgcaagctct acttccgaga gcttccgaac cctctgctca cctaccagct　1260

ctatgggaag ttcagtgagg ccatgtcagt gcctggggag gaggagcgtc tggtgcgggt　1320

gcacgatgtc atccagcagc tgcccccacc acattacagg accctggagt acctgctgag　1380

gcacctggcc cgcatggcga gacacagtgc caacaccagc atgcatgccc gcaacctggc　1440

cattgtctgg gcacccaacc tgctacggtc catggagctg gagtcagtgg gaatgggtgg　1500

cgcggcggcg ttccgggaag ttcgggtgca gtcggtggtg gtggagtttc tgctcaccca　1560

tgtggacgtc ctgttcagcg acaccttcac ctccgccggc ctcgaccctg caggccgctg　1620

cctgctcccc aggcccaagt cccttgcggg cagctgcccc tccacccgcc tgctgacgct　1680

ggaggaagcc caggcacgca cccagggccg gctggggacg cccacggagc ccacaactcc　1740

caaggccccg gcctcacctg cggaaaggag gaaaggggag agaggggaga agcagcggaa　1800

gccaggggggc agcagctgga agacgttctt tgcactgggc cggggcccca gtgtccctcg　1860

aaagaagccc ctgccctggc tggggggcac ccgtgcccca ccgcagcctt caggcagcag　1920

acccgacacc gtcacactga gatctgccaa gagcgaggag tctctgtcat cgcaggccag　1980

cggggctggc ctccagaggc tgcacaggct gcggcgaccc cactccagca gcgacgcttt　2040

ccctgtgggc ccagcacctg ctggctcctg cgagagcctg tcctcgtcct cctcctccga　2100

gtcctcctcc tctgagtcct cctcttcctc ctctgagtcc tcagcagctg ggctgggggc　2160

actctctggg tctccctcac accgtacctc agcctggcta gatgatggtg atgagctgga　2220

cttcagccca ccccgctgcc tggagggact ccgggggctg gactttgatc ccttaacctt　2280

ccgctgcagc agccccaccc caggggatcc cgcacctccc gccagcccag cacccccgc　2340

ccctgcctct gccttcccac ccagggtgac cccccaggcc atctcgcccc gggggcccac　2400

cagccccgcc tcgcctgctg ccctagacat ctcagagccc ctggctgtat cagtgccacc　2460

cgctgtccta gaactgctgg gggctggggg agcacctgcc tcagccaccc caacaccagc　2520

tctcagcccc ggccggagcc tgcgccccca tctcataccc ctgctgctgc gaggagccga　2580

ggccccgctg actgacgcct gccagcagga gatgtgcagc aagctccggg gagcccaggg 2640

cccactcggt cctgatatgg agtcaccact gccacccct ccctgtctc tcctgcgccc 2700

tgggggtgcc ccaccccgc ccctaagaa cccagcacgc ctcatggcc tggcctggc 2760

tgagcgggct cagcaggtgg ccgagcaaca gagccagcag gagtgtgggg gcaccccacc 2820

tgcttcccaa tccccttcc accgctcgct gtctctggag gtgggcgggg agccctggg 2880

gacctcaggg agtgggccac ctcccaactc cctagcacac ccgggtgcct gggtcccggg 2940

accccaccc tacttaccaa ggcaacaaag tgatgggagc ctgctgagga gccagcggcc 3000

catggggacc tcaaggaggg gactccgagg ccctgcccag gttcctaccc ccggcttctt 3060

ctccccagcc cccagggagt gcctgccacc cttcctcggg gtccccaagc caggcttgta 3120

cccctgggc cccccatcct tccagcccag ttccccagcc ccagtctgga ggagctctct 3180

gggcccccct gcaccactcg acaggggaga gaacctgtac tatgagatcg gggcaagtga 3240

ggggtccccc tattctggcc ccacccgctc ctggagtccc tttcgctcca tgccccccga 3300

caggctcaat gcctcctacg gcatgcttgg ccaatcaccc ccactccaca ggtcccccga 3360

cttcctgctc agctacccgc cagcccctc ctgctttccc cctgaccacc ttggctactc 3420

ccccccagc accctgctcg gcgccctaca ccgcctgagc ccctctacgt caacctagct 3480

ctagggccca ggggtccctc acctgcctct tcctcctcct cttccctcc tgcccacccc 3540

cgaagccgtt cagatcccgg tccccagtc ccccgccttc cccagaaaca acgggcaccc 3600

tggggacccc gtacccctca tagggtgccg ggtccctggg gccctcctga gcctctcctg 3660

ctctacaggg cagccccgcc agcctacgga aggggggcg agctccaccg agggtccttg 3720

tacagaaatg gagggcaaag aggggagggg gctggtcccc caccccctta ccccactccc 3780

agctggtccc tccactctga gggccagacc cgaagctact gctgagcacc agctgggagg 3840

ggccgtcctt ccttcccttc accctcactg gatcttggcc caaccaaatc ccttgttttg 3900

tattttcttg aaccccgacc actaccccag gtttctaact ttgtaacttg cttctgatgt 3960

gggtccctaa cctataatct cagcttccct accctggact gaagggtctg cccatccccc 4020

caccaccctc catcctgggg gccctcgcac aaatctgggg tgggaggggc taggctgacc 4080

ccatcctcct ctccctccag gagcccccag catgtcctga cctgtgcacg gggatggggg 4140

gacaactcct acccttcttt ccccacatgc cccactaaac catctgacaa cattaatgaa 4200

taaaatggtg aaaatgtg 4218

<210> 623

<211> 3686

<212> DNA

<213> Homo sapiens

<400> 623

caccctgtcg cccaccaagc gcctggtcca cgcgtccgag cagtacagca agcactcgca   60

ggagctgtat gccacggcca ccctccagag gccgggcagc ctggcaggta aaggctcgct   120

gccacctggc gcgactcacc tgggcgcgtg gcggggacgc ggaagcagca gcccggcttg   180

agcagaagcg aagccgggcg cgctgtctgc caggttgtag tagttgcagg agacagagaa   240

cgccagggct ttcctggaac aactggttcc cgagcctcat acagcagcca gcatgggcac   300

ctgggcccag agttgcgggc cctgcagtcc ccagaacacc acatagatcc catctatgaa   360

gaccgcgtct atcagaagcc ccctatgagg agtctcagcc agagccaggg ggaccctctg   420

ccgccagcac acaccggcac ctaccgcacg agcacagccc catcttcccc tggtgtcgac   480

tccgtcccct tgcagcgcac aggcagccag cacggcccac agaatgccgc cgcggccacc   540

ttccagaggg ccagctatgc cgccggccca gcctccaatt acgcggaccc ctaccgacag   600

ctgcagtatt gtccctctgt tgagtctcca tacagcaaat ccggccctgc tctcccgcct   660

gaaggcacct tggccaggtc cccgtccatt gatagcattc agaaagatcc cagagaattt   720

ggatggagag acccggaact gccggaagtg attcagatgt tgcagcacca gtttccctcg   780

gtccagtcta cgcggcagc ctacttgcaa cacctctgtt ttggagacaa caaaattaaa   840

gccgagataa ggagacaagg aggcatccag ctcctggtgg acctgttgga tcatcggatg   900

accgaagtcc accgtagtgc ctgtggagct ctgagaaacc tggtgtatgg gaaggccaac   960

gatgataaca aaattgccct gaaaaactgt ggtggcatcc agcactggt gaggttactc   1020

cgcaagacga ctgacctgga tccggggag ctggtcacag gagtcctttg gaacctctcc   1080

tcatgcgatg cactcaaaat gccaatcatc caggatgccc tagcagtact gaccaacgcg   1140

gtgattatcc cccactcagg ctgggaaaat tcgcctcttc aggatgatcg gaaaatacag   1200

ctgcattcat cacaggtgct gcgtaacgcc accgggtgcc taaggaatgt tagttcggcc   1260

ggagaggagg cccgcagaag gatgagagag tgtgatgggc ttacggatgc cttgctgtac   1320

gtgatccagt ctgcgctggg gagcagtgag atcgatagca agaccgttga aaactgtgtg 1380

tgcattttaa ggaacctctc gtaccggctg gcggcagaaa cgtctcaggg acagcacatg 1440

ggcacggacg agctggacgg gctactctgt ggcgaggcca atggcaagga tgctgagagc 1500

tctgggtgct ggggcaagaa gaagaagaaa aagaaatccc aagatcagtg ggatggagta 1560

ggacctcttc cagactgtgc tgaaccacca aaagggatcc agatgctgtg gcacccatca 1620

atagtcaaac cctacctcac actgctctct gagtgctcaa atccagacac gctggaaggg 1680

gcggcaggcg ccctgcagaa cttggctgca gggagctgga agtggtcagt atatatccga 1740

gccgctgtcc gaaaagagaa aggcctgccc atcctcgtgg agctgctccg aatagacaat 1800

gaccgtgtgg tgtgcgcggt ggccactgcg ctgcggaaca tggccttgga cgtcagaaat 1860

aaggagctca tcggcaaata cgccatgcga gacctagtcc acaggcttcc aggagggaac 1920

aacagcaaca acactgcaag caaggccatg tcggatgaca cagtgacagc tgtctgctgc 1980

acactgcacg aagtgattac caagaacatg gagaacgcca aggccttacg ggatgccggt 2040

ggcatcgaga agttggtcgg catctccaaa agcaaaggag ataaacactc tccaaaagtg 2100

gtcaaggctg catctcaggt cctcaacagc atgtggcagt accgaggtct gaggagtctc 2160

tacaaaaagg atggatggtc acaataccac tttgtagcct cgtcttcaac catcgagagg 2220

gaccggcaaa ggccctactc ctcctcccgc acgccctcca tctcccctgt gcgcgtgtct 2280

cccaacaacc gctcagcaag tgccccagct tcacctcggg aaatgatcag cctcaaagaa 2340

aggaaaacag actacgagtg caccggcagc aacgccacct accacggagc taaaggcgaa 2400

cacacttcca ggaaagatgc catgacagct caaaacactg gaatttcaac tttgtatagg 2460

aattcttatg gtgcgcccgc tgaagacatc aaacacaacc aggtttcagc acagccagtc 2520

ccacaggagc ccagcagaaa agattacgag acctaccagc catttcagaa ttccacaaga 2580

aattacgatg agtccttctt cgaggaccag gtccaccatc gccctcccgc cagcgagtac 2640

accatgcacc tgggtctcaa gtccaccggc aactacgttg acttctactc agctgcccgt 2700

ccctacagtg aactgaacta tgaaacgagc cactacccgg cctcccccga ctcctgggtg 2760

tgaggagcag ggcacaggcg ctccgggaac agtgcatgtg catgcatacc acaagacatt 2820

tctttctgtt ttgttttttt ctcctgcaaa tttagtttgt taaagcctgt tccataggaa 2880

ggctgtgata accagtaagg aaatattaag agctatttta gaaagctaaa tgaatcgcaa 2940

gttaacttgg aaatcagtag aaagctaaag tgatcctaaa tatgacagtg ggcagcacct 3000

ttctagcgtg agctgtagag taacgagaag tgctttatac tgaacgtggt tgatgggagg 3060

agagacgagg cattcgggcc ggtgggggcgt aagggttatc gttaagcaca agacacagaa 3120

tagtttacac actgtgtggg ggacggcttc tcacgctttg tttactctct tcatccgttg 3180

tgactctagg cttcaggttg cattgggggtt cctctgtaca gcaagatgtt tcttgccttt 3240

tgttaatgca ttgttgtaaa gtatttgatg tacattacag attaaagaag aaaagcgcgt 3300

tgtgtatatt acaccaatgc cgccgtgttt cctcatctat ggttctaaat attgcttcaa 3360

tttcaaactt ttgaaagatg tatggatttc cagtttttct ttactttctc ccagtatgtt 3420

ttaacaaaaa aaaaaaaaaa agcaggaaaa aaggaatatt tagcagtatt gttcgttctg 3480

atatgtgaat ttgtttgtga caactaaaca aggcattcag cagtttctga caattaacat 3540

acatcattcc acactccttg tcaacaaagt gcttttttcac tgcctaaaat tttagatgta 3600

gatatttgaa atagattttt tcatttatac cagtttttctt tatgatgata cagtgttaaa 3660

agaaaataaa ttacaattga tctgtc 3686

<210> 624

<211> 4213

<212> DNA

<213> Homo sapiens

<400> 624

aactcggctg cggctccatg gtctgagttg tcagccgttg tttttttcgtg ctcgctagtc 60

gccgccgccg ctccgccatg gggaagcgac agcaccaaaa ggacaaaatg tacattacct 120

gtgctgaata cactcacttt tatggtggca agaagccagc tgtcaaaact atcaagacta 180

caataacaag agcactgtca taattttaat ggaagtaaaa aatctcccac aaacaaattt 240

tcgtcgttta ccttttgacc actgcagtct ctctctgcag ccctttgtct acccagtctg 300

cactcccgat ggcatcgtct ttgacttact gaacattgtt ccatggctta agaagtacgg 360

gaccaacccc agcaatggag agaagctgga cgggaggtcc ctgatcaagc tgaacttttc 420

caagaacagt gaggggaagt accactgccc agtgctgttt accgtgttca ccaacaacac 480

ccacatcgtg gctgtgagga cgaccggcaa cgtctacgcc tatgaggcag tggaacagct 540

aaatatcaag gccaagaact tccgggacct gctgaccgac gagcccttct cccggcagga 600

```
catcatcacc ctccaggacc ccaccaattt ggacaagttc aatgtctcta acttctatca    660

tgtgaagaat aacatgaaaa taatagaccc agatgaagag aaggccaaac aggacccgtc    720

ttattatctg aaaaatacaa atgccgagac ccgagagacc ctgcaggagc tctacaagga    780

gttcaaaggg gacgagattc tggcagccac catgaaggcc ccggagaaga agaaagtgga    840

caagctgaac gctgatcttg ctatgttgtc taggctggtc ttgaattcct ggcttcaagt    900

gagagcctcc tgccttggcc tccgaaagtg ctggaattac aggcccacta ttccacaggg    960

aaggtcagcg cttccttcac ctccaccgcg atggtcccgg agaccacaca tgaagcagct   1020

gccatcgacg aggatgtgct gcgctaccag tttgtgaaga agaagggcta cgtgcggctg   1080

cacaccaaca agggcgacct caacctggag ctgcactgcg acctgacacc aaaaacctgc   1140

gaaaacttca tcaggctttg caagaagcat tattacgatg gcaccatctt ccacagatcc   1200

atccggaact ttgtgatcca aggggggcgac cccacaggca caggcacggg tggggagtca   1260

tactgggggga agcccttcaa agacgagttc cggcccaacc tctcgcacac gggccgcggc   1320

atcctcagca tggccaactc cgggcccaac agcaacaggt ctcaattctt catcacgttt   1380

cgctcctgtg cctacctgga caagaagcat accatctttg acgggttgt tggggggcttt   1440

gacgtactga cagccatgga gaatgtggag agtgacccca aaactgaccg ccctaaggag   1500

gagatccgca ttgatgccac tacagtgttc gtggacccct atgaggaggc cgatgcccag   1560

attgcgcagg agcggaagac acagctcaag gtagccccgg agaccaaagt gaagagcagc   1620

cagccccagg cagggagcca gggccccccag accttccgcc agggcgtggg caagtacatc   1680

aacccagcag ccacgaagcg agcagcagag gaagagccct caaccagtgc cactgtcccc   1740

atgtccaaga agaagcccag tcggggtttt ggggacttca gctcctggta gcggtaggtt   1800

ggccgctgtg gaccttggtg gggttgcagg gctgggggcc catgtccaca tctccatttc   1860

cagcctttct agcctgccct ctgctgccag ccaataaatt gcttgcctgc tgcctgcatc   1920

ccctttcctg gcccctggga gcccacagcc ttcccatccc ttaacctgtt gccaagggcc   1980

ttggccctgt ttccaggacc tggcccagcc agagcccact gctgggacct tcaagcacaa   2040

ggcctgccct acacccaggc tggtgcctca ggcctctcct ctagtaggca ggccaggtta   2100

gtgaggaagg actgtgtctc cagattgtgg tttcctcttt aagacagggt cttgctctgt   2160

tgcccaggct ccagtgcagt ggtgtgatca tggctcactg cagcctcgac ctcctgggct   2220

caagcaatcc tcctgcctca gcctcgcaag tagctgggac tacagccgtg caccactaca   2280

tccagctgta tatgtctggt tttcttaccc ctacttctgt catcttctca gggacagcct   2340
```

atttatacaa ccagtgtggt cccctgacca acgccattac ctgggacaag ttttcagacc 2400

ccagacttac tgagcctaag cctctgcagg gtgggcttct cggtctgttt tgacaaaact 2460

tcaggggctt ctgaaggctg gtgttggacg gcagcattga gtttcctgcc gtgccctgcc 2520

tgagctctca gggccctgct cacctgctct ggctgtgaac cacctgggct tcatctcaag 2580

cctgcctggc gtctctgtgc ccctgtgaga atcttgaggg gacccacact gggttgaggc 2640

cagtgtctcc tgctgtgaga acaagtggat gtccctctcc ccgccctcct gctgaagtgg 2700

ccttgctgct ctcaggcccg gccactgggc tccaagactc tgctcctcct gtcagtcact 2760

gactctgatg gccttgggcc ggctgcatca gcagccctta aagaaagacc cctccctcaa 2820

cccccatttt tctgttaaat gtgcccctgg ctggcttttt cttcgtcttc agcccaggcc 2880

agtggtcagt gttctcatgt catggactct ccttgcctga cacttgcctc ttgggctccc 2940

tgttgccctc aggccacccc ccacttctag ttcttcacac taagccctaa cttaggcctt 3000

gttcttggtt ttctcatttt tgttgcccca aatcttgaac ctgtcagcaa cttgcaggct 3060

gtacctctgc ccttcctttt ctcatcaatc actgatgctg aagctgcagg cctgagccct 3120

ttgtctccct ggatgctggg tggcgcctca tctgcatctc tgcctcaccc catccactgc 3180

cacaggctgc ctgatgacca ctagaggtat gtctgcccct cgtcaccctg ctgcacacca 3240

atctgtggcc cttcatcatg ctaagaacaa gaactgcgcc atggctggct ccttctcttc 3300

tccagcccat ccctctgcag cctgtcatcc ctgtctgtga ccattggtcg ggccctgggg 3360

ctctagagtg acttttgacg ccctccatcc ctcccgccag gcactgtcct ccgcaaggcc 3420

tggtgcagcc ctggcagtaa ctggcttgta agaggctcag acaccaagct gggcctgcag 3480

aggaggggca cagtaggaca cagtgactgc ccaggtgtcc acacacctgt aggcctctga 3540

gccagcgtcc agggtacagg tgcgggtggt ggggatgaag gcctgaccag ggagggagaa 3600

gcaggtttgg agaggaccct gtgcccaccc tgacagacac cctggctggc cctgactgac 3660

tgtattctct ggccacattc aagtccccca ttggtggggg cagagaagta ggaccaggcc 3720

atccttggct ccagagctcg aagaccccaa gacagccctc tgctctcagc ggcgccacag 3780

agagcctggg ctcagccttc tgcatcagga catggcctcg tccactgagg gcacgattta 3840

aacatttgac atcagaagct ttatttgtaa acctcacaca gataaggacc aagggctggc 3900

ggtgtggcca gaggacaggg gaagctgaag gccccgtgct tgagctcggc agtcctgctc 3960

cttgcagtga agccaccatg ggtgaccgtc cagcctcacc cggtggcctg cacagtgagg 4020

gaagggcttc agggccatct gctcccaggg caggggacag gccaccaagg acctttggca 4080

aatgaaggtt tacatttctg tagtttgttt gttttagagc ttaatttgta gttttttagc　4140

tattaaaacc atttgaattt ttaacgacct gatgagggca tcaggtaaat taaaggattt　4200

tgggaagatt ctt　　　　　　　　　　　　　　　　　　　　　　　　　　　4213

<210> 625

<211> 5282

<212> DNA

<213> Homo sapiens

<400> 625

accctgctct gtgcaggcga ttcacagcac ctcatctttt tggttaggtc cttggattta　60

atagtctttg aggtcccttc agctttttaca aatgaagatt ctgaatgaac ttatttctaa　120

ctaactctta atttgcgaat gttggaaaat catcaaatgg cagaggctaa ctggcagcct　180

gtctcattag tgagcctgag aggagcttcc ctaccttgtg tgattgtgtt gggctttagg　240

agggtgaatt tggaatgtct cggtgttcct acatccagct cggctctgtc cttcacctgc　300

gtgtggtact ctgtgatcat cacagcaggc atggcctaca tcttcctgat ccagctgatc　360

aacatcagct acaatgtgac tgagcgggaa gtccagcagg ccctccgaca gaagactggg　420

cgccggctcc tctgcgggct catcgtggac acaggccagt acaataggggg cttcctgcgg　480

aactggcacc agttctccac cctgggcaca cgtgcattcc accaccctgc cgaggacatt　540

gtctgaagtg ccttctatgt ggctctctga gggatgatgg ctcctccttc cgtctccctt　600

ccattttaca cttcagtgtc catttctatc cccagtttct taaaggcatt atagggccat　660

gctcaggttt agagactgga gtgggaagaa gttaatttttt ctgacgccac aacttaagag　720

actttatac tgaggcagta aaagtagagc cattcctttc cagtcacctt tttaattgac　780

tcagttgcct gaacttgaga aggatgtgga ttgctaatgc acaaattgat agaagcaatt　840

cccatccatt agtatggagg aaagagtgtt ggattgggat agtttctagt ccctctttcg　900

attcttaata gccatgtgac ccctagctga gtcactttcc caagtctcag ggtcatctgc　960

aaagtggggt actgatgcct gccctggcta cctcacagag ccgtcatgag ggtcacgtga　1020

gggaagatgg atgtggaaag cactaaaaaa caactcaaga gccatggaaa tacaaagtat　1080

taggaaaata ttatgatgga agaaaaacgt ttatagtcta gaatattgaa gccaatatta 1140

ttagggtaat cagtttttcag catatacctt gttgtacagt tatgagaatt tctccttctt 1200

attagacatg aactactcaa acagagaaga tgaccagatg gattgatgct aagttgtctc 1260

atcttgaaaa gacagttgac aacagttata aagataatta ttgctagtgt aatgtagtgt 1320

ggccatgagt ttaggtgatg agttcttcta tttatatttt ataaattctg cttgggtttc 1380

ttataaataa ctccaacagg cattcatgtg ttttctcct tcccatgttt caccaggtaa 1440

ggtgctagca cacttgtgac tgtggctgga agaggagaac agacactcct gtggggatgc 1500

tttactctct tttctggtag gaaggctgag taacatcacg ggctcgatta ttttcttcat 1560

gtatttcaaa tgctgtcagt tatagcacta aattgtgaaa atcagccttc tggcattcac 1620

attattctgg tatgaacttt gaggagttga gtgacatctt cccacttaac ttgcacatta 1680

attctcaatt acccctccct aaataacagt atctcactaa gagagaagaa acagggtata 1740

tgtggtttcc actattaatg gattactgtt cttccctggc tcttccgaca ataacaagtt 1800

gtttctttaa tcatatctta aaaccgaaaa tgtataaaag attaaatatt tatgtacaat 1860

gggttgttct actatagaat taagatgagg gaatttcaga tgaggaaaat acccttttga 1920

aatgttagtt ttgaacatgt actgttgtgc aatcccaaag ataattcatg actccttaaa 1980

tttgccttgg cttatagctt aatatagga aaatattgcc agcgtttca gtcattctgt 2040

gcatgctgct ttaagcaaga gatttatatt tgttgagagg aaatattgct acttcctgca 2100

cttccaccct ctgcagccgg caccgtccct actgttgcca ttaattggag ctgtccttaa 2160

gatggtcacc atattcttat tcaggctgtt gtcattttcc ccagagatgg tttgtttaac 2220

gaatgatagg ctctgtgcct ggggatgtta gcagactctg gggtttgtac agtgatgcct 2280

tctccctggc ccagagctga atattcatct agaattaaag ttggatttga tataacaaat 2340

ttctttctat acaggtttta cataagagag acagtaataa tgtcaaggat agcctgtgtg 2400

ggcagaaatt ggtagccgtg ctttttgaatg tcagctgtag agccaactct gattatctag 2460

ccattgatca tacaaattga tagaaacatt agtcagtaat tttagcttct tgccaaattg 2520

ttcacaacat ctaaatgtaa tgtgatgtga tgaagataag tagtacaaag agaccaaaat 2580

aatttgggag aattaggaat gatgacaatt ttttttttaac aacttacctc taatagggtt 2640

acttggatga gccaactcag cttccttccc atggatagga agggactctg tgtattattc 2700

aggtttattg gcacgaagat acttgtttta agttccttga gaacccatga tggacagttg 2760

acagaatgct taaacctgtc aaaagatgag tgattttgtg tgggaaaagc cttcccaggc 2820

gtctgtaccg aaaggagcag caaacaaggg gctaatccat gagcagtgtt ctgtaggctc 2880

tgtgacatct ttggtttata ggattttgga gccttttatg atctggaact atttgagggg 2940

tttcattata ggccttggtt ctctccaggg gccagatgag tttattgtgg aatctttgaa 3000

aggacaaggc ctctgtgaat gaatcagtcc cagggaagca tttggtggtg gcggcagtgg 3060

aggattgccc ggtgaaccta taaatcagca gtctcttggg cagaggagca agcccctcga 3120

acatgatttc aaacaagcag gtcctcttct ctcatctcat gtccttagtc tctgttaatg 3180

aacatactgg atgtggagtt taataaatta cctactatca tctggccact tagattatta 3240

tcacaccact gtggactgtt cctggggggga gaagaacaga ccgatttgaa agattcaagg 3300

gagaaagatt aaggatcagg attgcatgaa agaagaaaat ccttcaatat ttaaaatgtt 3360

tcttacaata cccacggagc acttttatgg ttccagccga gcgttcctga aatgaactga 3420

ccattaacag cgcctctttg ataggttacc ctgatgctgc taaagtaaag ccttaagtgt 3480

gtttttggga caacgtgctg cttattccac ctcagccaca tatgtgtttg tgtttaggat 3540

attgtaaatc tttgctaagt agtgtttttcc ttggtgaatg aagtcattgt tgtcttcaag 3600

tgtaccatct gcctagcaaa aaaattgcta caaactttct cttatgcaat agtccttggt 3660

acttctaata tttttagcaa gagacaattt tctgtactag aatcttccac tgccagaaaa 3720

cacagtgcca gtaaggttct acataccact gaccatctgc ttaatagaca tgtatttcct 3780

ttgagtagga cattagcttt tgattataaa gctcaactag tataagcaaa aatataacat 3840

ctagaagcac agttttagcc aggatgttta aaaattacag ttttgtgaga cttaagggtc 3900

tttttaacct aggtaagttt atatgaccta acttaattgt agccatattc tggtaccttc 3960

cattttgaaa agtagaggtt gcttaagcaa gcaatggata ataagagact tttcctgagg 4020

cacctgtttg gaatctggtt ttctcagcgg cagcttgaca tgtgcaccct tttgtattaa 4080

acactgcaag ggtgatgcag gggagcagga aagccatcct aaactcacta ctgagtacga 4140

ttcagtatgt tcctgtggat gtctgctgtg actaatataa atttcttgca gaatcagcta 4200

cacttaatta tgttgctgat agacaagcat ccacgcttca gctggcacta agtgttttca 4260

ttgtaggatc agcagcaggt taaagactga acggttagtg aagacaaatg tcttaagagg 4320

ctgcgatgtc taggttgggc ttgtgacttc ttagtggcct agccttcttg atggcacctt 4380

gaaagtgaac ttctagaaat ctacatttaa aaggcaaagc tttaaaagca gagctagtct 4440

attctagtta ctgatgcaac taaaattctg tatttcttaa gatggagcca ctgacgagat 4500

gtcacagtat agagcctgca gtctcaactc attgtgatcc taatggtctg ggtgattgga 4560

tggtttgagt tgttagggat tttgagtttt tcattttatt gcatatctgg gttggatgtt 4620

agactaaagg aaacccagga atatttacct ggtgttacat ttaatattta atgtaactgg 4680

tctagcaaca ttaaggggga tttctgaagc caactccgga ggctgtgggc tgcacatttt 4740

gcactgtttt tatatacttg tattcatatc ctcttatcac ctcagcctca gacacaaggc 4800

cttttacatg gaaattttac aaattacttc catttatgta aaataacgtc ctgtgaccaa 4860

gttgtttaaa tggaaaataa agtgctttct ttaaggaaaa tagctggtgt ttcttggagt 4920

gtctcctgaa gtcttctgat ttctgaaaac cctgcattat acctgtgctg cctctgtggc 4980

tccctcaatg tctctatcct gtggccctgt ccctagccct aaactgttat gttcccggtg 5040

gcaatttctc cagttttgtg ggtcagggat actgcttgtt ggggcattat gttaacagta 5100

acattttgaa acatactttc atgatagtcc agcaaaaaac agcatcaaaa ctatttccat 5160

tgtatctctt tagaaggctc tgtattcggt aaaaagtcta gctggcgcca ttggaatatg 5220

ggctgctaaa gactcaattt ctagttgatg tttgaggtga ggcaaaaata aagctaaagt 5280

ag 5282

<210> 626

<211> 3729

<212> DNA

<213> Homo sapiens

<400> 626

gtacgattca accaccaagc aagccagaaa cgagtgctct caaaacactg gcactgttgc 60

agcagggttg gttggaggct gaacattgat ggcaacagtt ggtgtgatgg ttaatactga 120

gtgtcaactg gagtggattg aaggatgcaa agtactattc ctaggtctgt ctgtgagggt 180

gttgtcaaag gagattcaca tttgagtcgg tggactggga gaggcagacc caccctcaat 240

ctgggcgggc accatctaat cagctgccag cgtggctaga ataaatcagg cagaggaagg 300

tggaaggact ggacttgctg agtcttccgg ccttcaactt tctcccgtgc tggatgcgtc 360

ctgccctcga acatcggact ccaagtcctt cagcttttca gctcttgcat ttacaccagt 420

ggttttttcaa gggctctcgg gcctttggcc gcagactgaa ggctgcactg ccggcttccc 480

tgcttttgag gttttgggac ttggactgat ccaccactgg cttcctggct cctcagcttg　540

cagatggcct attgtgggac ttcaccttgt gactgtctgg caatggatac ctcggagatg　600

gggagcatat ctggctgcag ccagctgcag atgaatcatc tgaggacact gaattcagcg　660

gcgaggcgct agggactcaa atgaactgga aaggccagga atagcagcac atggagggag　720

cgccatccag cgtggaggga agacgctgcc cagctgtgcc actgcccagc agcctccggg　780

caaggtcctg cttgagctga ctctccagca gccgagaagg tctgtgccag ccatgcacac　840

acccctgagc gtgtcccctg ccaggactaa gcacgggcag cctctggaca tctgcaaatt　900

aaaaagaaga cacccctgct ctttccagct gtatgaacca gtcccggacc agacgcctgt　960

gtctgctaag ggttttctca cttatttgct aaacccctgt ccctgctcta agaagagcac　1020

ctaacctgcc cacctccccg tatacggtct cccccggcaa tgaaatgaga agcacttttg　1080

gcctcatgtt tacttgatgg atggacaaaa cacagaacat gacgcagtca ccaccgccga　1140

tggccacaga gtgacaggtg attgcgggaa attaaacagc cctccctaag tcatccatca　1200

tgagaacctc attccttccc tcggccaagg gtcggcagtg ctctcgcgga gcaattcatc　1260

accggcgggc catgtcatcg caggccgtcg cctctccggg aagccgggat cgaccaggcc　1320

cggctcgccc gcccggaaat gccttttaag cgccatccta agtgggaatt taattgaagt　1380

gtaataaggc atctaatgtg agattaagag gcaaggccac ctggaatgag ccgtcactta　1440

aataattact ttgctttctc ggtcacagct ccctcaccag tgaccgtgtg gtcatttagc　1500

atcagtatcg gaggtagagg cggtcctggg ggctcgccag gtcctgtttc ccagcccgcc　1560

ttctgggcag tgggagaggt ggaagaccag cctggtgggg aagtggggtc acgtggccgg　1620

tcctggccaa tgagatgcgc agtccctttt cagaactggg cccgggtctc tctgcgcctt　1680

gctcttccct gccctcccca ggacgaacgc aggcctggca ctgggctgac ggagtggccg　1740

ctgcccgggt cacgccatag aggccagcac ttgcagcggc ttggcctggc cccagagcag　1800

tttctatgtg cgtgaaagga ccgaagattc aggtcaccat agcgtaacgc agaccagatg　1860

gacaccccac atagggcccc tgcagcctgc gagctagggg tgctgcctgc aaagaggaag　1920

gacgtggggt ttgcttcacc tgcctccagt ttggatgaga cctcgggacc cacttccagt　1980

gtttccattt tagagggaag ggcaagaagc tatatttcaa gaaggggggc catgccccgc　2040

cacctggcag cggagcctga gctgaacctg cttggccctc ccaaccttct cagagctcct　2100

gcctaccagg acctgctgta ggagcttttg gggtcttggt gacccagtca gagccactcg　2160

gtcacaggat cagctgctgc ctggtgagtg ccctcttacc ggcttccccc taaggccact　2220

```
ggtaaggctg ggacctttat gggtagagag gcccggctgg tcacgaccac tgacctgtga  2280

acatcattct gaagtcgacg gcactgactt gtaagtggag ggggcagatc cagtagaaaa  2340

cacaccgcgg gttttgtagg tggtgggaag tctttcaaca ggcatttttg gacagcctgc  2400

tgtgcgcacg gcacccagtg ttctgtgaat cttgccattg atctcaaggc cagccagatg  2460

cccatgaaat atcgggcacg ttgggcagca ggctttttatt ttggtctgag ttcagcctgc  2520

tgttattact tcctcatctt ttcctttcag gtttccaaaa gcctgggccc gtggtgaatc  2580

ctggctggga ggaactttga gggcacccct gggctcctcc cctgtgccct gccccccgcc  2640

gacgccatcc ctgatagtgc ccagattctc cttaacttat ttccaggagc ggcagcgctg  2700

gctttctcag tgcctctggg gacaggccgt tcaccccgcc cgccactact cgggccactt  2760

ttgaccCCCg ggagtattcg gcaacaagtc tggcaagagc atcagtgtgg gtggccagtg  2820

accacgtgca gcacttggcc tgcagcaaga gccagctgca tgggctgggc tggagtcagg  2880

ggcttgtctg gacctcatca ggatgcagag gagggatctg gcctggagga ccctgccctg  2940

cacgtccgcc tcagagccag ggtgacccTt tgcctttgtc cttgaagaaa tgcatttcag  3000

ggactcaatg tccctgattg tcccgatcca gagtccagag caggagaggc tgtcactccc  3060

tcccctgtcc ctggaacatt agaacagccc atgggagggg caacactgtc cttgggagac  3120

ctcagtcctc atccatccca ccctgaatgt caaagccacg tgacggagtt caaccagctt  3180

cctccaagct ggccatgcct ttccacaccc gtctttggcg ggttcccttc tgaaattcct  3240

cctcttcctc ccacatgcgc cttcccacga cctccatgct tctaaggagc aatcgtgcct  3300

cctggatgcc tctctgtcag ctttcaatgt ggggaataaa gacctacgga agtgttggca  3360

agccagttaa aaatagcccc atctattaaa aggtgaaaac gtggtgagaa acacaggcag  3420

ggtgggggtg aatgtgctgc ctgcctcagc cctgccctct ttctggaaga gccagccctc  3480

cccagactcg gcagcccaat cagatgccct gaccccacca gccacctcca acccacgcga  3540

gcccttaggg tggcggccct ggctgcccag tgagtatcta tctcaagcct gtgtggatgt  3600

cagtttgctt tttaatcttg ttcccttgat acatatcagc ttttaaatca aggaatgtgt  3660

cttcccaaat gaagaggctt ttattaggca ccctgtatcg ctttcaaaag aaaaagtcac  3720

attaattcc                                                          3729
```

<210> 627

<211> 4582

<212> DNA

<213> Homo sapiens

<400> 627

```
acaggcgccg gcggtccccg ccagctagca gcccggcgag gcgctggccc acccatggtc      60

ctcgggcggc ggcccctgcg cccagccctg cgcgtagcct ccgtctctcg cccggggccg     120

ccgagccccc gacacgggcg agatgctgaa cggcgcaggc ctggacaaag ctcttaagat     180

gtccctgccg cggaggtcga ggatccgctc gtccgtggga cctgttcgtt cttctttggg     240

ctataagaag gcagaggatg agatgtcccg ggccacgtct gttggcgacc agctggaggc     300

acccgcccgc accatttacc tcaaccaacc gcatctcaac aaattccgcg acaaccagat     360

cagtacggcc aagtacagcg tgttgacatt tctacctcga ttcttgtatg agcagattag     420

aagagctgct aatgccttct ttctcttcat tgccttatta cagcaaattc cagatgtatc     480

tccaacagga agatatacca ccctggtgcc attgatcatt attttaacaa ttgcaggcat     540

caaagagatt gtagaagatt ttaagcgaca caaggcagac aatgcagtta acaaaaagaa     600

aacaatagtg ttaagaaatg gtatgtggca taccattatg tggaaagagg tggcagtggg     660

agacattgtg aaggtcgtca atgggcagta tcttccagca gatgtggtcc tgctgtcatc     720

cagtgaacct caggcaatgt gttatgttga aacagctaat ctggatgggg agacgaacct     780

taaaatacgt cagggtttga gtcacactgc tgacatgcaa acacgtgaag ttctgatgaa     840

gttatctgga actatagagt gtgaagggcc caaccgccac ctctatgact tcactggaaa     900

cttgaactta gatgggaaaa gccttgttgc ccttgggcct gaccagatct tattaagagg     960

tacacagctt agaaatactc agtgggtctt tggcatagtt gtttatactg gacacgacac    1020

caaactcatg cagaattcaa ccaaagcgcc tctcaagaga tcaaatgttg agaaggtgac    1080

taacgtgcag atcctggtgt tgtttggcat cctcttggtc atggccttgg tgagctcggc    1140

gggggccctg tactggaaca ggtctcatgg tgaaaagaac tggtacatca gaagatgga    1200

caccacctca gataattttg gatacaacct actgacgttc atcatcttat acaacaatct    1260

tattcccatc agtctgttgg tgactcttga ggttgtgaag tatactcaag ccctttttcat   1320

aaactgggac acagatatgt attatatagg aaatgacact cctgccatgg ccaggacatc    1380

aaaccttaat gaagagcttg ggcaggtgaa atatctcttt tctgacaaga ctggaacgct    1440
```

```
tacatgcaat atcatgaact ttaagaagtg cagcattgcc ggagtaacct atggtcactt 1500

cccagaattg gcaagagagc cgtcttcaga tgacttctgt cggatgcctc ctccctgtag 1560

tgattcctgt gactttgatg accccaggct gttgaagaac attgaggatc gccatcccac 1620

agcccccttgc attcaggagt tcctcaccct tctggccgtg tgccacacgg ttgttcctga 1680

gaaggatgga gataacatca tctaccaggc ctcttcccca gatgaagctg ctttggtgaa 1740

aggagctaaa aagctgggct ttgtcttcac agccagaaca ccattctcag tcatcataga 1800

agcgatggga caggaacaaa catttggaat ccttaatgtc ctggaatttt ctagtgacaa 1860

aaaaagaatg tctgtaattg ttcgaactcc ttcaggacga cttcggcttt actgtaaagg 1920

ggctgataat gtgatttttg agagactttc aaaagactca aaatatatgg aggaaacatt 1980

atgccatctg gaatactttg ccacggaagg cttgcggact ctctgtgtgg cttatgctga 2040

tctctctgag aatgagtatg aggagtggct gaaagtctat caggaagcca gcaccatatt 2100

gaaggacaga gctcaacggt tggaagagtg ttacgagatc attgagaaga atttgctgct 2160

acttggagcc acagccatag aagatcgcct tcaagcagga gttccagaaa ccatcgcaac 2220

actgttgaag gcagaaatta aaatatgggt gttgacagga gacaaacaag aaactgcgat 2280

taatataggg tattcctgcc gattggtatc gcagaatatg gcccttatcc tattgaagga 2340

ggactctttg gatgccacaa gggcagccat tactcagcac tgcactgacc ttgggaattt 2400

gctgggcaag gaaaatgacg tggccctcat catcgatggc cacacactga agtacgcgct 2460

ctccttcgaa gtccggagga gtttcctgga tttggcactc tcgtgcaaag cggtcatatg 2520

ctgcagagtg tctcctctgc agaagtctga gatagtggat gtggtgaaga gcgggtgaa 2580

ggccatcacc ctcgccatcg agacggcgc caacgatgtc gggatgatcc agacagccca 2640

cgtgggtgtg ggaatcagtg ggaatgaagg catgcaggcc accaacaact cggattacgc 2700

catcgcacag ttttcctact tagagaagct tctgttggtt catggagcct ggagctacaa 2760

ccgggtgacc aagtgcatct tgtactgctt ctataagaac gtggtcctgt atattattga 2820

gctttggttc gcctttgtta atggattttc tgggcagatt ttatttgaac gttggtgcat 2880

cggcctgtac aatgtgattt tcaccgcttt gccgcccttc actctgggaa tctttgagag 2940

gtcttgcact caggagagca tgctcaggtt tccccagctc tacaaaatca cccagaatgg 3000

cgaaggcttc aacacaaagg ttttctgggg tcactgcatc aacgccttgg tccactccct 3060

catcctcttc tggtttccca tgaaagctct ggagcatgat actgtgttga caagtggtca 3120

tgctaccgac tatttatttg ttggaaatat tgtttacaca tatgttgttg ttactgtttg 3180
```

```
tctgaaagct ggtttggaga ccacagcttg gactaaattc agtcatctgg ctgtctgggg   3240

aagcatgctg acctggctgg tgttttttgg catctactcg accatctggc ccaccattcc   3300

cattgctcca gatatgagag gacaggcaac tatggtcctg agctccgcac acttctggtt   3360

gggattattt ctggttccta ctgcctgttt gattgaagat gtggcatgga gagcagccaa   3420

gcacacctgc aaaaagacat tgctggagga ggtgcaggag ctggaaacca agtctcgagt   3480

cctgggaaaa gcggtgctgc gggatagcaa tggaaagagg ctgaacgagc gcgaccgcct   3540

gatcaagagg ctgggccgga agacgccccc gacgctgttc cggggcagct ccctgcagca   3600

gggcgtcccg catgggtatg cttttttctca agaagaacac ggagctgtta gtcaggaaga   3660

agtcatccgt gcttatgaca ccaccaaaaa gaaatccagg aagaaataag acatgaattt   3720

tcctgactga tcttaggaaa gagattcagt ttgttgcacc cagtgttaac acatctttgt   3780

cagagaagac tggcgtcagc agccaaaaca ccaggaaaca catttctgtg gccttagcca   3840

agcagtttgt tagttacata ttccctcgca aacctggagt gcagaccaca ggggaagcta   3900

tctttgccct cccaactcgt ctgcagtgct tagcctaact tttgtttatg tcgttatgaa   3960

gcattcaact gtgctctgtg aggtgtgaaa ttaaaaacat tatgtttcac caatatttaa   4020

acatcagtac tagttgtcct gggagaaagg gaaaggagtt ttatgttgcg tgagaggccc   4080

atcctgtgta attggagcag ggcacacttg cttcctgttg agttaactca gaggttaagt   4140

ccaacgggcc acatgcagac ttcactgtag gcaggttgct ctcctgcttt gattcctgtt   4200

ttgtgtgtaa aattggcata aacttcttga ttgcagtgaa atcacaaaat tctctatcgg   4260

ggtggtcaac ctgagaacat ttatttgaac ctcttagcca catttccagc agggcaaacc   4320

aactgatgcc ctggaagagt cttccgcacc ctctccaggt gcactcggcc cagtcctgcc   4380

gccgtgtcca ggcgcccctc accccacac ctgctgcatg gctggccaca ccactcagtg   4440

catggcggcc gatgggcagc caacccaaac ccgcgccttt ccttgttcca ctgcagactc   4500

agatacagat gcgaaaaatt ccttcttcca ccgcccttct cgttctgtaa agaaagaaaa   4560

gaaacatagc ctttctgcat at                                            4582
```

<210> 628

<211> 4857

<212> DNA

<213> Homo sapiens

<400> 628

agaggggaaa agaacgtcag gagagtgaac gggagcaaat aaaacgctgt ccattctgac 60

tggaagggcc agagccgtgt ctaagggcgg gggccgggag gtggcccgcg gtggtgtctc 120

taccaggacg aggcctgggg tatctgaaga ggggatgacg tccaggcgct ttgctaaagg 180

gaagccagaa gggtatgagt tgctagggtc agagatgggg ctttcggctc gagtctttcc 240

ctgcagggca gagagtccga agagcccgag aaggcaggga ggacagtggg cctggtcctt 300

ccccggccgg cagagggagt cccgagatgg aacgtccagc tctcctctaa cgaaaagcgt 360

ttgcatggct gtctcgccaa ttctgtacct cccggggctg aggaagagcc gaggtgacta 420

gaagctagcg acaagtgccg gccacctccg acgccaggcg ccgggcttgg agcccgacgg 480

gccgaattct cgcgagagcg gccgccgcca tttttccatt gattgcagcg ggctgggggа 540

ggggccgacg acgaagtcgg ctgtggtagc ggcggcggcg gcggcggagc cctgggtcgg 600

tgtctgcgcg ctggtgtctg aggcccaggc tgaggcctcc gctattgctg gagcgcaggc 660

ggcggagagg atgactgccg ctgccattct ctcttgagct agcgagccgc cgccaccccc 720

caccctcccc cggcagggcg gagaggagcg gccggagtca gcgatggtgc ccggcgagga 780

gaaccaactg gtcccgaaag aggcaccact ggatcatacc agtgacaagt cacttctcga 840

cgctaatttt gagccaggaa agaagaactt tctgcatttg acagataaag atggtgaaca 900

acctcaaata ctgctggagg attccagtgc tggggaagac agtgttcatg acaggtttat 960

aggtccgctt ccaagagaag gttctgtggg ttctaccagt gattatgtca gccaaagcta 1020

ctcctactca tctattttga ataaatcaga aactggatat gtgggactag taaaccaagc 1080

aatgacttgc tatttgaata gccttttgca aacacttttt atgactcctg aatttaggaa 1140

tgcattatat aagtgggaat ttgaagaatc tgaagaagat ccagtgacaa gtattccata 1200

ccaacttcaa aggctttttg ttttgttaca aaccagcaaa aagagagcaa ttgaaaccac 1260

agatgttaca aggagctttg gatgggatag tagtgaggct tggcagcagc atgatgtaca 1320

agaactatgc agagtcatgt ttgatgcttt ggaacagaaa tggaagcaaa cagaacaggc 1380

tgatcttata aatgagctat atcaaggcaa gctgaaggac tacgtgagat gtctggaatg 1440

tggttatgag ggctggcgaa tcgacacata tcttgatatt ccattggtca tccgacctta 1500

tgggtccagc caagcacttg ctagtgtgga agaagcattg catgcattta ttcagccaga 1560

```
gattctggat ggcccaaatc agtatttttg tgaacgttgt aagaagaagt gtgatgcacg 1620

gaagggcctt cggtttttgc attttcctta tctgctgacc ttacagctga aaagattcga 1680

ttttgattat acaaccatgc ataggattaa actgaatgat cgaatgacat ttcccgagga 1740

actagatatg agtactttta ttgatgttga agatgagaaa tctcctcaga ctgaaagttg 1800

cactgacagt ggagcagaaa atgaaggtag ttgtcacagt gatcagatga gcaacgattt 1860

ctccaatgat gatggtgttg atgaaggaat ctgtcttgaa accaatagtg gaactgaaaa 1920

gatctcaaaa tctggacttg aaaagaattc cttgatctat gaacttttct ctgttatggc 1980

ccattctggg agcgctgctg gtggtcatta ttatgcatgt ataaagtcat tcagtgatga 2040

gcagtggtac agcttcaatg atcaacatgt cagcaggata acacaagagg acattaagaa 2100

aacacatggt ggatcttcag gaagcagagg atattattct agtgctttcg caagttccac 2160

aaatgcatat atgctgatct atagactgaa ggatccagcc agaaatgcaa aatttctaga 2220

agtggatgaa tacccagaac atattaaaaa cttggtgcag aaagagagag agttggaaga 2280

acaagaaaag agacaacgag aaattgagcg caatacatgc aagataaaat tattctgttt 2340

gcatcctaca aaacaagtaa tgatggaaaa taaattggag gttcataagg ataagacatt 2400

aaaggaagca gtagaaatgg cttataagat gatggattta gaagaggtaa tacccctgga 2460

ttgctgtcgc cttgttaaat atgatgagtt tcatgattat ctagaacggt catatgaagg 2520

agaagaagat acaccaatgg ggcttctact aggtggcgtc aagtcaacat atatgtttga 2580

tctgctgttg gagacgagaa agcctgatca ggttttccaa tcttataaac ctggagaagt 2640

gatggtgaaa gttcatgttg ttgatctaaa ggcagaatct gtagctgctc ctataactgt 2700

tcgtgcttac ttaaatcaga cagttacaga attcaaacaa ctgatttcaa aggccatcca 2760

tttacctgct gaaacaatga gaatagtgct ggaacgctgc tacaatgatt tgcgtcttct 2820

cagtgtctcc agtaaaaccc tgaaagctga aggatttttt agaagtaaca aggtgtttgt 2880

tgaaagctcc gagactttgg attaccagat ggcctttgca gactctcatt tatggaaact 2940

cctggatcgg catgcaaata caatcagatt atttgttttg ctacctgaac aatccccagt 3000

atcttattcc aaaaggacag cataccagaa agctggaggc gattctggta atgtggatga 3060

tgactgtgaa agagtcaaag gacctgtagg aagcctaaag tctgtggaag ctattctaga 3120

agaaagcact gaaaaactca aaagcttgtc actgcagcaa cagcaggatg gagataatgg 3180

ggacagcagc aaaagtactg agacaagtga ctttgaaaac atcgaatcat ctctcaatga 3240

gagggactct tcagcatcag tggataatag agaacttgaa cagcatattc agacttctga 3300
```

```
tccagaaaat tttcagtctg aagaacgatc agactcagat gtgaataatg acaggagtac  3360

aagttcagtg gacagtgata ttcttagctc cagtcatagc agtgatactt tgtgcaatgc  3420

agacaatgct cagatccctt tggctaatgg acttgactct cacagtatca caagtagtag  3480

aagaacgaaa gcaaatgaag ggaaaaaaga aacatgggat acagcagaag aagactctgg  3540

aactgatagt gaatatgatg agagtggcaa gagtagggga gaaatgcagt acatgtattt  3600

caaagctgaa ccttatgctg cagatgaagg ttctggggaa ggacataaat ggttgatggt  3660

gcatgttgat aaaagaatta ctctggcagc tttcaaacaa catttagagc cctttgttgg  3720

agttttgtcc tctcacttca aggtctttcg agtgtatgcc agcaatcaag agtttgagag  3780

cgtccggctg aatgagacac tttcatcatt ttctgatgac aataagatta caattagact  3840

ggggagagca cttaaaaaag gagaatacag agttaaagta taccagcttt tggtcaatga  3900

acaagagcca tgcaagtttc tgctagatgc tgtgtttgct aaaggaatga ctgtacggca  3960

atcaaaagag gaattaattc ctcagctcag ggagcaatgt ggtttagagc tcagtattga  4020

caggtttcgt ctaaggaaaa aaacatggaa gaatcctggc actgtctttt tggattatca  4080

tatttatgaa gaagatatta atatttccag caactgggag gttttccttg aagttcttga  4140

tggggtagag aagatgaagt ccatgtcaca gcttgcagtt ttgtcaagac ggtggaagcc  4200

ttcagagatg aagttggatc ccttccagga ggttgtattg gaaagcagta gtgtggacga  4260

attgcgagag aagcttagtg aaatcagtgg gattcctttg gatgatattg aatttgctaa  4320

gggtagagga acatttccct gtgatatttc tgtccttgat attcatcaag atttagactg  4380

gaatcctaaa gtttctaccc tgaatgtctg gcctctttat atctgtgatg atggtgcggt  4440

catatttttat agggataaaa cagaagaatt aatggaactg acagatgagc aaagaaatga  4500

actgatgaaa aaagaaagca gtcgactcca gaagactgga catcgtgtaa catactcacc  4560

tcgtaaagag aaagcactaa aaatatatct ggatggagca ccaaataaag atctgactca  4620

agactgactc tgatagtgta gcattttccc tgggggagtt ttggttttaa ttagatggtt  4680

cactaccact gggtagtgcc attttggccg gacatggttg gggtaaccca gtgacaccag  4740

cactgattgg actgccctac accaatcaga agctcagtgc ccaatgggcc actgttttga  4800

ctcggaatca tgttgtgcac tatagtcaaa tgtactgtaa agtgaaaagg gatgtgc     4857
```

<210> 629

<211> 4166

<212> DNA

<213> Homo sapiens

<400> 629

```
agatgatagc aatgcctcgg ggagcttcct cactctgtcc tctgtctgcc tttcagctgt      60

gagaggaact gcaggccagt taatgccagc aaagacattc tgctcagggt caccatgggg     120

gaggactctc cagtggctat gttcagctgg tatttggaca caccccaac agagcaggct      180

gagcccctcc tggatgcctg cagactcaga ggattttggc caaggtcctt aaccctcctc     240

cagagcaaca cctccacgtt gctgttgaac agctcgtttc tgcagtcccg gggagaggtc     300

atccgaatca gagccacagg ttcctgccta cactgtggcc ctgaacctgc cctcccatca     360

gtgtatctgc cacttggaga ggagaacaat gactttgtgc tgacagtagt tatttctgcc     420

accaatcgtg caggggacac gcagcagacc caggccatgg ctaaggtggc actcggagac     480

acatgtgttg aggatgtagc attccaggct gccgtgtcag agaaaatccc cacagctctg     540

caaggcgagg gtggccccga gcagctcctc cagctggcca aggctgtgtc ctccatgctg     600

aaccaagagc atgaaagcca gggctcagga cagtcactga gcatagacgt cagacagaag     660

gtaccgtgg gaagctgggg ggctcctttc attcccttcc tctggggccc cagggtctgc      720

gtgcggccat ttgggctgtg gatcaaggtt catggatcag gggagaaacc tgtggtgtct     780

cccaagcggc tgacaccacc tccctctctg gtcttttggg tgagtgacat aaagtgaaga     840

aaatgccttc ttccttggta acctgctttc tcggctggcc ctcatggagg cacaggcctc     900

tgggatgggg ggagtttaga acacatcacc ccctgccttt catgtttcag atgacaaggc     960

agagccccag agcagaaagg ggactgtcct cggtcacatg ggtagcggtt tggagttgga    1020

ccacagatgg cgtcccggct ttgtcactta ccattcgcat tgtcacaggc cagggaccaa    1080

acctctctaa gtctcagttt ccccatatag aagaatacta gtctcctcat acaattgtag    1140

taagagttaa ataagaatta cgatcactgc aactaaaaa ctagataaga ccgtcaacat    1200

tcaatcagtt ttaatctaca aaaatggccg ttccatgtgt tacaacctag tatgataagc    1260

tattgcagaa cgtatgattg tgtccactcc cagcgtgtgc cacatgagtt tgtgttcgtg    1320

tgtgtgcatg cacacaccca cacacacacc cctgtgggca cggagaagag aagaaagact    1380

tctcttggct ccctgaaagg tttgcaggaa ggtactgagt gtggtgctag aggcctggta    1440
```

```
ggtacttaat acaggaagcc ggattgtcat tgtggtcgct taccgagaga aactaacatg  1500

tatcaagcac ctgctatgag ctgccaggcc ctgaattagg gcttcatgga tctgtaatcc  1560

ccactacaac cctgggacgt aaatggtgag gcctccatct atgttacagc tgaggaaaca  1620

gagggtaaga gaatcagagg tgcctgcctg tgtccctgtg tctggtaagt ggtgaagcct  1680

gggttcaaac ccagtttaga ggttcccct ccacctccag ccctcttacc ccagaccccc  1740

tgccacatac atacacattg gctctcacac atcatacata cacactttca cacacactct  1800

tatgcacaca cacacactca aacatgttca cacacacaca ctcacaaaca cattcacata  1860

ctcccacaca catactcaca cacttatacg catatacata catgctcaca cactcactca  1920

tatgactcat actcacacac atacacacac tgacagatgc tcacacacac acactcatat  1980

acacacatac acatgcacac acaaactcac acacatgctc acacacatac actgacacgc  2040

tgtcacacac acacatactc ccacacacaa ttatgctttc acacatacac atacatacac  2100

actcacacac tttcacacac acgcagctct cattcttggt cacattcact ctgagaagta  2160

ccaatgggaa gcttcccctg gacatcctgt ggtccccaag cacacagacc acacagccta  2220

acccaaggtc tccccatgaa atgcccgggg cctggcacaa gacagatgtc aaactctcac  2280

tgggcagctg agaagatgtt aacaagggct ctgttgagac aggtgtgtgc agggcttagg  2340

gaacaaacta gacagcgtgg aggaccccag aggcccggcc tgccgtgagc aggatccagg  2400

gggcggctgc ccacagaggg actctctggt aggagctgtg gcttttgaag aatgaggcgg  2460

ccagcccccg gtgacctggc cggggggcatc aggagaatga cccctcccag ctctctctcc  2520

tcctgccatc tcgtcccctg ctgggctcct gctgggtgag tccatttgcc ggagggtcca  2580

gagccggtga catctttacc cagggtaggt gacaaacgat ggggttaggg cctgcagaag  2640

caaatgtgag attacccatt atctgagttt cccttctgga atattctgca aagagtctcc  2700

tgccacactg acctattctt tcctcaaccc aagacacagc cgggatggag gcctggctgt  2760

ccctggaatg gatggcagat gcactcatac ttggaagctt cgggaaagcc tgtcaggctg  2820

agccaggtgt gagcaacagg ccacggtgtc tctgccccat caaaagtggc tgctgcttaa  2880

atctaagtca ttattaaaat taaataaagt tacaaatgac agttctactg ggcagtgctg  2940

aaatgatgtt cttagttttt ctctgctcct accaaagccc ctcaccagcc cctcattagt  3000

gctttgtagt gtagaaagca cttgaccctg aagcccgtgg cctggcccaa gacaggagtg  3060

gagggctggg tagggggggtt cttgtcccca ctgctgcaaa ggcacacagg gaccccaagc  3120

ctccggtgag acctcccatc catgccagac caacagtcat ccagtttctg aatttcatgc  3180
```

cattctggtc acaggtgcca cggtgagaca caatttattt tcaaatagtg ccaaattcta   3240

cagattcaat ttgaagattt ggagaaagct tgagacatcc tatatatgtt tgctagggct   3300

gctgttacaa atgaccacaa agatcatggc ttaacgcaac acgcatttat tcactttata   3360

gttctggagg ccagaagttt aaaatggggt ccactaggcc aaaagtaagg tgatggcaga   3420

gctgcaaacc tggaggctcc aggagagaag ccattccttg cctttccgg gttctagagg   3480

ccgcctgcac tccttgactc ctatcttcaa agccagccac gcagcatctc caaagtcctc   3540

tcctctccct ctgtctctcc ccacccttac ctcatcctct ttccctctct ttttcttccc   3600

cctacccctg cctccatcac ccatctcctg ttctgattaa cgttcctacc tccctcttag   3660

aagggtcgta tgatgacgtt ggtcccacct gttcggataa tctctccatc tcagaatttt   3720

taacttaatt gcttctccaa aatgacttag tcaaagtgcc ttttgccaca ttcagtaaca   3780

tattcacagg tttcagggat gtgaatgtgg gcatcttgag ggggctgtta tctgcctaat   3840

cacacatcat acaaggcaga cagaggtctg cagggcttta gaaaccacca gtgaggccag   3900

gtgcggtggc tcacgcctgt aatacctgca ctttggaagg ctgaggcagg tggatcactt   3960

gaggtcagaa gttcaagacc agcctggcca acatggcaaa accctgtctc tactaaaaat   4020

acaaaaaatt agctggtgat ggtggtgcgc acctgtaatc ccagctactc aggaggctga   4080

ggcccgaacc caggaggcgg aggttgcaat gagtcgagat catgccagtg tactccagcc   4140

tgggtgacag agcgagactc tgactc   4166

<210> 630

<211> 4773

<212> DNA

<213> Homo sapiens

<400> 630

taacaatagc agagcaagac tgacaacaat aattaaaata agagaataaa gaagatgtag   60

tcagaggcca ttctgaatgc attcagattc tcagtgtgta tgaggaaggc tgcctgtaat   120

taagagggaa tctttaacca gtttcagtgt agtagtgaaa aagtgcttcc atctgacact   180

ctccgcagtg ctctggcaaa gactttccag gatgaacaac gtttccagct gggaattatg   240

```
gatgatgctg cagagtgctt tgaaaacctc ctgatgagaa ttcacttcca cattgctgat    300

gaaaccaaag aggatatatg tactgcccaa cactgcattt cccatcagaa atttgcaatg    360

acattgtttg agcagtgtgt atgtactagc tgtggtgcca cttctgatcc gctgcctttc    420

atccagatgg tacattatat ctccaccact tccctttgca atcaggctat ttgtatgctg    480

gaaagacgag agaaaccttc accaagcatg tttggtgagc tgctgcagaa tgccagcacc    540

atgggggatc tgcggaactg tccaagcaac tgtggagaga ggatcaggat tcgccgtgtg    600

ttgatgaatg ctccacagat tatcacgatt gggctggtat gggactcaga ccactcagac    660

ttagcagaag atgttatcca cagcctggga acctgcctta agctgggtga tctgttttc    720

agagtgacgg atgaccgggc caagcaatct gaactgtact agttggaat gatctgttac    780

tatggcaaac attattctac attctttttt caaacaaaga ttcgcaaatg gatgtatttt    840

gatgatgctc atgtcaagga gattgggccc aaatggaagg atgtggtgac caaatgcatc    900

aaggggcatt atcagcccct gctgctgctt tatgcagatc cccagggtac cccagtttcc    960

acccaggacc tgcctcccca agctgagttc cagtcataca gcaggacatg ctacgacagt   1020

gaagattcag gacacctgac tgatagtgaa tgtaatcaga aacacacatc caagaaaggg   1080

tcactgatag agcgcaagag gagctctggt cgggttagga ggaaaggcga tgagccccag   1140

gcctcgggat accacagtga aggagaaaca ctgaaagaga agcaggctcc tagaaatgcc   1200

tccaaaccat ccagcagcac caacaggctg agagatttta aagagacagt cagcaatatg   1260

atccataaca gaccatccct ggcttctcag accaatgtag gctctcactg caggggcaga   1320

ggaggagacc agcctgacaa aaaacctcct aggaccctgc ctttacactc tcgtgactgg   1380

gaaatagaga gtaccagcag tgagtcaaaa tccagttctt ccagcaagta tcgtcccaca   1440

tggagaccca acgagaatc tctgaatatt gacagtatct ttagtaagga caaaaggaag   1500

cactgtggct atacccagct tagcccctttt tctgaggatt cagctaaaga atttatacca   1560

gatgaaccaa gcaagccacc ttcttacgac attaaatttg gtggaccaag cccccagtac   1620

aagcgctggg gcccagcacg gccaggctct cacctttttag agcagcaccc ccgactaatc   1680

cagcgaatgg aatctggcta tgaaagcagt gagaggaaca gcagcagccc tgtcagcctg   1740

gatgcagccc tgcctgagag ctcaaatgtc tacagggatc caagtgctaa gagatcagct   1800

gggttggttc cttcctggcg tcatatccca aagtcgcaca gcagtagcat cctggaggta   1860

gactccacag catccatggg tggctggaca aagagtcagc ctttctctgg tgaggagata   1920

tcttctaaaa gtgaactgga tgaattgcag gaagaggtgg ccaggagggc gcaggaacag   1980
```

出証特２００４−３０５９６６１

gaacttcgaa gaaaacggga gaaggagtta gaggcagcga aagggtttaa ccctcatcct 2040

agccgcttca tggacttgga tgaactgcag aatcaggtga gcagcctatc ccgctccaag 2100

tattgttaag ccaagaggcc caactggaat ccggcatgga tacagagttt ggggccagtt 2160

ctttcttcca ttcacctgct tcctgccatg agtcacactc atcactatct ccagagtcat 2220

ctgccccaca gcacagctcc cccagtagat ctgccttgaa gcttctgact tcggttgaag 2280

tagacaacat tgaaccctct gcattccaca ggcaaggttt acctaaagca ccagggtgga 2340

ctgagaagaa ttctcatcat agttgggagc cattggatgc cccagagggt aagctgcaag 2400

gctctaggtg tgacaacagc agttgcagca agctccctcc acaagaagga agaggcattg 2460

ctcaagaaca gctgttccaa gaaaagaagg atcctgctaa cccctccccg gtgatgcctg 2520

gaatagccac ctctgagagg ggtgatgaac acagcctagg ctgtagtcct tcaaattcat 2580

cagctcagcc cagccttccc ctgtatagaa cctgccaccc cataatgcct gttgcttctt 2640

catttgtgct tcactgtcct gatcctgtgc agaaaactaa ccaatgcctc caaggccaaa 2700

gcctcaaaac ttcattgact ttaaaagtgg acagaggcag tgaggagacc tataggccag 2760

agtttcccag cacaaagggg cttgtccgtt ctctggctga gcagttccag aggatgcagg 2820

gtgtctccat gagggatagt acaggtttca aggatagaag tttgtcaggt agtctaagga 2880

agaactcttc cccttctgat tctaagcctc ctttctcaca gggtcaagag aaaggccact 2940

ggccatgggc aaagcaacaa tcctctctgg agggtgggga tagaccactt tcctgggaag 3000

agtccactga acattcttct cttgccttaa actctgggct gcctaatggt gaaacttcta 3060

gcggaggaca gcccaggttg gcagagccag acatatacca agagaagctg tcccaagtga 3120

gagatgttag gtctaaggat ctgggcagca gtactgactt ggggacttcc ttgcctttgg 3180

attcctgggt gaatatcaca aggttctgtg attctcagct taagcatggg gcacctaggc 3240

caggaatgaa gtcctcccct catgattccc atacgtgtgt aacctatcca gagagaaatc 3300

acatcctttt gcatccacat tggaaccaag acacagagca ggagacctca gaattggagt 3360

ctctgtatca ggccagtctt caggcttctc aagctggctg ttctggatgg gggcagcagg 3420

ataccgcctg gcacccactt agccaaacag gctctgcaga tggcatgggg aggaggttgc 3480

actcagccca tgatcctggt ctctcaaaga cttcaacagc agaaatggag catggtctcc 3540

atgaagccag aacagctaca ccttgccgag gcctcagcag ggagtgtggg gaggatgagc 3600

agtacagtgc agagaattta cgtcgcatct cacgcagtct cagtggcacc gttgtctcag 3660

agagggagga agctccggtt tcttcccaca gttttgattc atcaaacgtg aggaagcctt 3720

tggaaaccgg gcaccgttgt tccagctcct cttccctccc tgtcatccat gacccttctg 3780

tgtttctcct cggtccccaa ctctaccttc cccaaccaca gttcctgtcc ccagatgtcc 3840

tgatgcccac catggcaggg gagcccaata gactcccagg aacttcaagg agtgtccagc 3900

agtttctggc tatgtgtgac aggggtgaaa cttcccaagg ggccaagtac acaggaagga 3960

ctttgaacta ccagagcctc ccccatcgct ccagaacaga caactcctgg gcaccctggt 4020

cagagaccaa ccagcatatt gggaccagat tcctgactac tccagggtgc aatcctcaac 4080

taacctacac tgccacacta ccagaaagaa gcaagggcct tcaggttcct cacactcagt 4140

cctggagtga tcttttccat tcaccctccc accctcccat tgttcatcct gtgtacccac 4200

catctagcag tcttcatgta cccctgaggt cagcttggaa ttcagatcct gttccagggt 4260

cccgaacccc tggtcctcga agagtagata tgcccccaga tgatgactgg aggcaaagca 4320

gttatgcctc ccactctgga cacaggagaa cagtgggaga ggggtttctg tttgttctat 4380

cagatgctcc cagaagagag cagatcaggg ctagagtcct gcagcacagt caatggtaaa 4440

ggttattcct ttcctttcct ggagctacac ctttctttgt aaaactgtac tgtgggccgg 4500

gcgcggtggc tcacacctgt aatcccagcg ctttgggagg ctgaggcggg tggatcacga 4560

ggtcaggaga ttgagaccat cctggccaac atggtgaaac cccgtctcta ccaaaataca 4620

aaaaattagc caggcgtgac ggtgcgtgcc tgtagtccca actactcgga aggctgaggc 4680

aggagaattg cttgaacccg ggaggcagag gttgcagtga gccgagatcg caccactgca 4740

ctccagcttg gcaatagagt gagactccat ctc 4773

<210> 631

<211> 4979

<212> DNA

<213> Homo sapiens

<400> 631

aagctgagct ccctgggtga tggctccttc cacaagttct aacgtcccac tgaaagcaag 60

ctgcaatttc tgttgcttct tgtatcaatt gcatgaaagg acgggcagtt tcttttgatc 120

ctctggcatg ccaaggcctg aatgccagtc ctgggagcct taccagccct ctaagaagaa 180

tcagaagcct gaccgggcgg gaagtcctga cgcccttccc aggattgggc actgcggcag 240

ccccggcaca gggcggggcc cacctcaagc cacattctct tgtcctgccc atcacagcgc 300

tgccaccacc gcctctggcc ctcagagggc ggcaggcaac ctctaagctt cctcctttcc 360

tctcttcccc ctttcctccc tccctatgcc cctgggtgcc cgatccaggc ttcaaagaga 420

cagctttcct gtacgcggtg tcctctgccg ccctcaccca caccctggcc cgggcctgca 480

gcgctgggcg catggagcgc tgcacctgtg atgactctcc ggggctggag agccggcagg 540

cctggcagtg gggcgtgtgc ggtgacaacc tcaagtacag caccaagttt ctgagcaact 600

tcctggggtc caagagagga aacaaggacc tgcgggcacg ggcagacgcc cacaataccc 660

acgtgggcat caaggctgtg aagagtggcc tcaggaccac gtgtaagtgc catggcgtat 720

caggctcctg tgccgtgcgc acctgctgga agcagctctc cccgttccgt gagacgggcc 780

aggtgctgaa actgcgctat gactcggctg tcaaggtgtc cagtgccacc aatgaggcct 840

tgggccgcct agagctgtgg gcccctgcca ggcagggcag cctcaccaaa ggcctggccc 900

caaggtctgg ggacctggtg tacatggagg actcacccag cttctgccgg cccagcaagt 960

actcacctgg cacagcaggt agggtgtgct cccgggaggc cagctgcagc agcctgtgct 1020

gcgggcgggg ctatgacacc cagagccgcc tggtggcctt ctcctgccac tgccaggtgc 1080

agtggtgctg ctacgtggag tgccagcaat gtgtgcagga ggagcttgtg tacacctgca 1140

agcactaggc ctactgccca gcaagccagt ctggcactgc caggacctcc tgtggcaccc 1200

ttcaagctgc ccagccggcc ctctgggcag actgtcatca catgcatgca taaaccggca 1260

tgtgtgccaa tgcacacgag tgtgccactc accaccattc cttggccagc cttttgcctc 1320

cctcgatact caacaaagag aagcaaagcc tcctccctta acccaagcat ccccaacctt 1380

gttgaggact tggagaggag ggcagagtga gaaagacatg gagggaaata agggagacca 1440

agagcacagc aggactgaaa ttttggacgg gagagagggg ctattccatc ttgcttcctg 1500

ggatgaatgg cttggagcca gcatgttctt gggaggtgaa ctgctgggct aggaatgcca 1560

aggcaggcag tgccagctgg aagtgaaggc gggagcctgg ctgagatggg tcaatcgggt 1620

cctgtggccc tgctcaggtg cagtgggctc caggtgtcac acacctccac cactcccctg 1680

gttttgctgt gccagagatg gggagaaagc acaggtggta gaagccatcc gttcagagaa 1740

aggagagctt tctgtgcttg agtggacccg agtgagatct gtgccctgga gccctgtgtc 1800

cttgatttgg cttttcaaat atgcctccgc tgaggcctca ttcttgtctc gagagctggg 1860

ttatgcacac tcacccagcc gtgctcaaaa ctaccaccag tgcaggtaag acaggtggga 1920

gaactagcca ccaaggcggg actcagtgca cctgaggttg aacagggaga caacggcccc   1980

tccctgtgtt ccctgctggc caaaggaatc ttcactccca gcgcagagga ggagggcaac   2040

agcttcctgg tgcctggcag tgacgtggcg agctcagttt ctcagctggc tcttgagtga   2100

gctttggtga cttcctgtgg ctggggcctg cctggtctgt gacacccca taccagctga   2160

gttcacaata ctgaagaaca gctggctcac gagctatgac ttgaagttac atttctattc   2220

ttgtggctgc tcatctagtt aaggcttttg ccctggctgg ggttataggt gcttgagtcc   2280

ttgctaagcc tggctcctgg gtagcctcct tcagttccta atggcctctc acttggccct   2340

cactttggct cttacttgag gaggagacgt gactttgata atttcctcag atcctgtgga   2400

cattttcagc agcacctgcc aaggccctct gtgaaaggag gagagactgg tacctccaca   2460

caggcacaca tggatgcaca gcccctggac caggctgggg gttcctgttg cacatgcctc   2520

tcttgttcag gatgaagacc ttgcaggggt ccccttgctg gaggcattgt acttccccag   2580

agtggggccc gatgccaccc aggaggaaat gacttctttc gggaagccct tggccacttt   2640

gctggccctg ccacgcccat ctgtcagctt cctttctccc taaacctaga gttgctgacc   2700

cttcaccaac acaggaaatt tcagaatcag ctgaatgctc agaaacctcg cctgtgccag   2760

ctccaggaca aaggcccgct gactgtgccc tggccaactc cctgagacct ccaagggcga   2820

ggaggagctg cccagtctcc agtggatcag ggcagtctgc tggatgctgg aaggattttt   2880

gactgcagag gcccggctga gaagccaaac tgacctgagc ccctctcgtt aaaatgacat   2940

tgctgaccca agcacctggc ccacaccttg gcagcaggag aaaaatgggg agagggctgg   3000

ttttctcctt tcttccactt ccccacagca tggagatttt ctctgccttc ccaatccatc   3060

ttgctcctcc gagaccccaa ctctgcctcc acccaggctc agtgctgggc gtaaggcagc   3120

agggacctca ctggcagagc aggggggcctg ggagcaacgt ggaggccaga gcaccctgat   3180

ccaccaacat gccacctgca ttctgacttc atggctggca gtgccagggt cgtgggaggg   3240

caaagggcag gctctaaggc atctaggcag tggctggctg ctaacatgga caccccaagt   3300

caatggcaca gtgcaggttc tgagggctcc ttggcttgtg gggtcttctc tgtctgtctc   3360

tctccctctc ttcttccttg ctctcatccc tttcttttcc agttacccct gaagacccac   3420

ctcggccctc ttggggcccc tggggactag agtgaccact gacccctcat tctacagctt   3480

taagggaaat gctcacaggg tattttgtc tacctcaaat atatagtttt tagagcaaag   3540

gagaataatt tatatagcta agatatatga gaaagtattt atattattta tatagttgct   3600

atatttcaca gacagcacag gtgggggtttg tgtattttcc cggaaaccct ctgtctgggg   3660

agatacagcc tgacctgacc gggtccccca ctgagcagga ggccgggtcg ctgggaagga 3720

ggacaaacct gtattccatg actgggtctg tctcggagct ggtaagcaca tgtccgctct 3780

gtgatgagcc ctggtgggct ccatccagac cctccttgtg atgtttttgt agattttctg 3840

cccttctggg tccaggcccc cttcttctgc tctggcaaaa gtgtcttact cataatgata 3900

atgacaacga gaattcccac acctggcatt tgtaaagcac tttgctattt agaaacaaaa 3960

acttttaccc ctttcatctc acttgatttc tccgttatct ctgtgaggta ggtggggcca 4020

cattactgtg gccattttat agatgaggtc cagagatgga gagctgtgct caaagtcaca 4080

cctaagagac ttgttcaatg aatatttact gaacatctcc atagaccagg cactacgggc 4140

tgacctgctc tgagcccagg agccccaaag cctggatacc actgtgagcc caagaactca 4200

gggaagcagt tccttcccag gctgtgatcc cagccttttg gatctggatg gcatgttggc 4260

acttcccccca agtggagtcc catgtctcag gggctttggc tgcctgagaa ggctggagag 4320

accaggaacc catggaggcc actccaaggg gtccttctgc ccacactgcc caagaagctt 4380

gggctacacc actgggcccc tcccaaccta cagatgaatt ttgattgctc tcatttgtgt 4440

tttgcttgta aaaatgaatt gttttccact ggatttctgg ctgcttttgc aaaagtcagc 4500

tgcgctggca gactgggcct gcatgtcctc ctgcaggcag ctagagtgag ggagtctaat 4560

ggacaggatg ccccaagtgc ccccgttgct catggatgcc cctgcctgcc tctcatgagc 4620

acatagtcct gtcccctggt ctagataagc ccagctttcc tggtaccctt catcacctgg 4680

cagacagaca gccccatgcc aaccctggac attacttgct tttgaacctt tcctttctca 4740

acaaccatga acttcaaatg ctttctgtct caggacgctt tagaataaca atggaagcca 4800

tcacttattg agcaccccctt atgtccattt attcaaccaa tgattatttta gggatctctt 4860

attgagcacc aggcagcatc ctgggtgctt ggtgcagcaa ggaacaggac caagtctctg 4920

cctcatgggg ctgacatcct agtgggtgag aaagacaata aaccaataaa tgacatggc 4979

<210> 632

<211> 5395

<212> DNA

<213> Homo sapiens

<400> 632

```
ttgcaaatac attttttccat tctgtaggtc gttgccttac tctgttgatg tttccttcat    60

tatgcagaag ctttttagct taatgtaata ccatttgtct gtttttgctt ttgttgctta   120

tacttttgag gtcttaatcc acaaaattct tgccaagatc aatgtcatgg agctttcctc   180

ttatgtcttc ttttagtagt ttgataattt tggattttac atattttaca tttaagtttt   240

tacttccttt ggggttggtt tttgtacatg gtgaaagatg ggtcaagttt catccttttg   300

catgtggata tccaggtttt ccaacaatgg atactgaaga gactttcctt tcctctctgt   360

gtgttcttgg tgtctttgtg gaacttctgt tggctgaaaa tgcagagatt tatttctggg   420

ctattatttt ccatggagct gtgtgtttgt ttttaatggc agtactaagc ccttttagtt   480

actatagctt tgtgatatga tagtaaatta gtgtgaatac tctcagcttt ttgtttgttg   540

gtttgttttg tttcacatat tgctttgggt attttgagtc tttggggttc catatcaatt   600

taagggttgc ttttttgaaa atttctgtga aggatgctgt tattttttgac agggattaaa   660

ttgaatttct agatcagttt ggatagtatg gacattttag caatattaat tcttgtggtc   720

tgtgaggaca aggtgtctta aaatttcttt gtgtgttctt cagtttactt catcattatt   780

tgtatagttt gcagtgtagt tattttttta cctctttaaa tttattgcta gagattttttt   840

tcagctgtta caaatgaagt ttttattttg ttttttcag ataattttct actaatgtat   900

acaaacacca ctgattttta tattgatttt gtatcctgca aattactga atttgttagt   960

tctaacacca tttttacgga ggccttagca tcctcttaaa aaagaagtgt tttctttaag  1020

actttttttat aaatcttcaa acagggataa cataactttc tcttttccaa tttgaatgtt  1080

tttttaattt cttttcctgc ctcattgctc tggctgggac ctccggcact gtgttagttg  1140

acagtggcaa aacagggcat tattttttgag tttacaatat ggacctcttg tgaccaggaa  1200

taccagaggc agcatgttct aagacacagt tgtcttctta tgtatgtttt gctcagtttg  1260

cctctcctca tcgtatccta ctccctactc actctggcaa atctctgacc caacaggagt  1320

atgcgaccag tggttggaac ctgaatgtga tgccagtgct agatcagtct gttctctgtc  1380

acatcaatgc agacatctca ggcatgaagg tgccctggct gtacgtgggc atggttttct  1440

cagcattttg ttggcatatt gaggatcact ggagttactc tattaactat ctgcattggg  1500

gtgagccgaa gacctggtat ggtgtaccct ccctggcagc agagcatttg gaggaggtga  1560

tgaagatgct gacacctgag ctgtttgata gccagcctga tctcctacac cagcttgtca  1620

ctctcatgaa tcccaacact ttgatgtccc atggtgtgcc agttgtccgc acaaaccagt  1680
```

```
gtgcagggga gtttgtcatc acttttcctc gtgcttacca cagtggtttt aaccgaggct 1740

acaattttgc tgaagctgtc aacttttgta ctgctgactg gctacctgct ggacgccagt 1800

gcattgaaca ctaccgccgg ctccggcgct attgtgtctt ctcccacgag gagctcatct 1860

gcaagatggc tgccttccca gagacgttgg atctcaatct agcagtagct gtgcacaagg 1920

agatgttcat tatggttcag gaggagcgac gtctacgaaa ggcccttttg gagaagcttt 1980

ccttacaagg ttgagtccac atcagggctc agtgttggct gaggtggggt gtccacaacc 2040

ctactcctag tctttacagt atatgtgggt tgaacacccc cagggcgtca cggaggctga 2100

gcgagaggct tttgagctgc tcccagatga tgaacgccag tgcatcaagt gcaagaccac 2160

gtgcttcttg tcagccctgg cctgctacga ctgcccagat ggccttgtat gcctttccca 2220

catcaatgac ctctgcaagt gctctagtag ccgacagtac ctccggtatc ggtacacctt 2280

ggatgagctc cccaccatgc tgcataaact gaagattcgg gctgagtctt ttgacacctg 2340

ggccaacaaa gtgcgagtgg ccttggaggt ggaggatggc cgtaaacgca gctttgaaga 2400

gctaagggca ctggagtctg aggctcgtga gaggaggttt cctaatagtg agctgcttca 2460

gcgactgaag aactgcctga gtgaggtgga ggcttgtatt gctcaagtcc tggggctggt 2520

cagtggtcag gtggccagga tggacactcc acagctgacc ttgactgaac tccgggtcct 2580

tcttgagcag atgggcagcc tgccctgtgc catgcatcag attggggatg tcaaggatgt 2640

cctggaacag gtggaggcct atcaagctga ggctcgtgag gctctggcca cactgccctc 2700

tagtccaggg ctattgcggt ccctgttgga gaggggcag cagctgggta tagaggtgcc 2760

tgaagcccat cagcttcagc agcaggtgga gcaggcgcaa tggctagatg aagtgaagca 2820

ggccctggcc ccttctgctc acaggggctc tctggtcatc atgcaggggc ttttggttat 2880

gggtgccaag atagcctcca gcccttctgt ggacaaggcc cgggctgagc tgcaagaact 2940

actgaccatt gcagagcgct gggaagaaaa ggctcatttc tgcctggagg ccaggcagaa 3000

gcatccacca gccacattgg aagccataat tcgtgagaca gaaaacatcc ctgttcacct 3060

gcctaacatc caggctctca aagaagctct gactaaggca caagcttgga ttgctgatgt 3120

ggatgagatc caaaatggtg accactaccc ctgtctagat gacttggagg gcctggtggc 3180

tgtgggccgg gacctgcctg tggggctgga agagctgaga cagctagagc tgcaggtatt 3240

gacagcacat tcctggagag agaaggcctc caagaccttt ctcaagaaga attcttgcta 3300

cacactgctt gaggtgcttt gcccgtgtgc agacgctggc tcagacagca ccaagcgtag 3360

ccggtggatg gagaaggcgc tggggttgta ccagtgtgac acagagctgc tggggctgtc 3420
```

```
tgcacaggac ctcagagacc caggctctgt gattgtggcc ttcaaggaag gggaacagaa  3480

ggagaaggag ggtatcctgc agctgcgtcg caccaactca gccaagccca gtccactggc  3540

accatccctc atggcctctt ctccgacttc tatctgtgtg tgtgggcagg tgccagctgg  3600

ggtgggagtt ctgcagtgtg acctgtgtca ggactggttc catgggcagt gtgtgtcagt  3660

gccccatctc ctcacctctc caaagcccag tctcacttca tctccactgc tagcctggtg  3720

ggaatgggac acaaaattcc tgtgtccact gtgtatcgc tcacgacggc cacgcctgga  3780

gacaatccta gccttgctgg ttgccctgca gaggctgccc gtgcggctgc ctgagggtga  3840

ggcccttcag tgtctcacag agagggccat tggctggcaa gaccgtgcca gaaaggctct  3900

ggcctctgaa gatgtgactg ctctgttgcg acagctggct gagcttcgcc agcagctaca  3960

ggccaaaccc agaccagagg aggcctcagt ctacacttca gccactgcct gtgaccctat  4020

cagagaaggc agtggcaaca atatttctaa ggtccaaggg ctgctggaga atggagacag  4080

tgtgaccagt cctgagaaca tggctccagg aaagggctct ggtaagacag gtgtggtttg  4140

ggtaggctgt tggctaaaca taactgagtg acccatgtat ttgtcacctc tgttgtggcc  4200

atggaggata agaccaagag tggcctctaa cccagtctgt ccctgcacct ttcaccgcac  4260

caccttccgc ccagacctgg agctactgtc ctcactgttg ccgcagttga ctggccctgt  4320

gttggagctg cctgaggcaa tccgggctcc cctggaggag ctcatgatgg aaggggacct  4380

gcttgaggtg accctggatg agaaccacag catctggcag ctgctgcagg ctggacagcc  4440

tccagacctg gacagaattc gcacacttct ggagctggaa aaatttgaac atcaagggag  4500

tcggacaagg agccgggctc tggagaggcg acggcggcgg cagaaggtgg atcagggtag  4560

aaacgttgag aatcttgttc aacaggagct tcagtcaaaa agggctcgga gctcagggat  4620

tatgtctcag gtgggccgag aagaagaaca ttatcaggag aaagcagacc gtgaaaatat  4680

gttcctgaca ccttccacag accacagccc tttcttgaaa ggaaaccaaa atagcttaca  4740

acacaaggat tcaggctctt cagctgcttg tccttcttta atgcctttgc tacaactctc  4800

ctactctgat gagcaacagt tgtgacagtg gcaccaaagg tcattgtgg ctgtttttgt  4860

ttgtttgttt cttaaatcct actatctcct ggcctggacc tcagaaggag ctttttgcct  4920

atctataatt tttcactgcc aatttttgat atcctctctc ctagagttac tgttaaaagg  4980

ttggttcgta aagtccacac cccgatgctc agaagtgtct tgccagcaac attcctgcta  5040

gcatacagga gtgatttcct aaaccagttt cattctagtc tgaataggga caaacaaatc  5100

ttgaggaagc ccaagtgcgt acctttattt ttgcccccgc caccctcttt ctatacttca  5160
```

atttttgttt gtttttgtt tttttgtccc tgtcataaaa tattttggtg cttcaaaact 5220

tgtaccttca ttgtacatcc ttttcttttc tccccttggg tcttattata aaagaagaca 5280

atgtacgttg taattaccaa aaagaatagg gaaaaacaag aatttcatga ctctacctgt 5340

ggtctatctt taatttcatt tcttttgtta aaaataaaac aatgagtatg tttgg 5395

<210> 633

<211> 5401

<212> DNA

<213> Homo sapiens

<400> 633

gaggagccca gggacatatt tcacagctaa gtcaactgct tttcttcaaa ttcagattta 60

atccttgagt gaaatgagtc actggctcat ccagttaaga tcatcaccca ctttcctaac 120

aaaacttctc ttcaaagaag gactcgctca tccatcaggt ggacctccac aggaacaaat 180

catatccatg tcaggcggca ccaaacctaa atctgcttct gcctcagcag acaggacatg 240

agattagtgc caccatcaag gacttgaaag atgcaggggt gatgattccc aacccattcc 300

tgttcaactc tcccatttgg cctgtgcgga agacagatgg atcttggaga acgacagtga 360

attatcataa gcttaaccaa gtggtgactc caattgcagc tgctgtagca gatatggttt 420

cattgcttga gaaatgtgta cctggtatgc agccattgac ttggcaaatg ccttttttctc 480

catacctgtc cataaggccc accagaagca atttgccttc agctggcaag gccagcaata 540

tacctttaca gtcctacctc agaggtatag caactctcca gctctgtgtc ataatcttat 600

tcggagagac cttgactgct ttttgcttct gcaaagtatc acactggtcc attacattga 660

tgacattatg ctgattggat ccagtgagca agaagtagca agtacactgg acttgttggt 720

gagacatttg tatgccagag gatgggaaat aaatccgact aaaattaagg aaacttccac 780

ctcagtaaaa tttttagggg tacagtggtg tggggcctgt caagatattc cttctaaggt 840

gaaggataag ttgctgcatt tggccactcc tacaaccaag aaagaggcac aatgcctact 900

gggccgattt ggattttgga ggcaacatgg tccttatttg ggtgcattac tgtggcccat 960

ttatcaagtg acctctaagg ctgccagttt tgagtggggt ccagaacagg agaaggctct 1020

```
gcaacaggtc caggctgctg tgcaagctgc tctgctactt gggccacatg acccagcaga   1080

tccaatggtg cttgaggtgt cagtagcaga tagggatgct gtttggagcc tttggcaggc   1140

ccccataggt gaatcatggc agaggccgct aggatttttag agcaaggccc tgtcatcttc   1200

tgcagataac tattcttctt ttgagagaca gctcttagac tgttactgaa ctttggtgga   1260

aactgagcat ttgactatgg gtcatcaagt caccatgtga cctgaactgc ctatcaggaa   1320

ctgggtgctt tctgacccac ctagccataa ggtgggtcat gcacagcaga attccatcat   1380

caaatggaag tgatatatac gtgattgggc tcgagcaggt cctgaaggca tgagtaagtt   1440

acgtgaagaa gtggctcaaa tgcccatggt gtctacttct gccaccctgc ctgctccccc   1500

cccagggtgc actgatggcc tcatggggag ttccctataa ttggttgaca gaggaaaaga   1560

agacctggtt cagagatgat tctgcatgat attcaggaac catgcaaaag tggacagcta   1620

tagcactaca gccctttttct aggacatccc tgaagggcag cagtgaaggg aaatcttccc   1680

agttggcaga actttgagca gtgaacctgg ttgtgcactt agcatggaag gagaaatggc   1740

caggtgtgcg attatatact gattcatggg ctgtagccaa tggtttggct ggatggtcag   1800

ggacttggaa gaagcatgat tggaaaattg gtgacaaatt tggggaagag gtatgtggat   1860

ggacctctga gtggccaaaa actgtgaaga tatttgtatc ccacgtgagt gctcaccaac   1920

ggatgacctc agcacaggag attttaataa tctggtggat agaatggcct gttatgtgga   1980

caccactcag cctctttccc cacccacccc tgtcgtcgcc cagtgggccc attaacaaag   2040

tggccatggt ggtagggatg gaggttatgc atgggctcag caacatgtac ttccactcac   2100

caaggctgat ctggctacgg ccactgctga gcgcccaatt tgccggcagc agagactaac   2160

accgaaccct tgatatagca ccattactca tggtgattag ttacctggtg gcaggttgaa   2220

tatattcaac ctcttccatc atggaaaggg aagaggtttg tcctcactgg aatagacaat   2280

tactctggat atagatttgc ctatcctgca cacaatgctt ctgccaagat taccatctgt   2340

ggactcacgg aatgctttat ccactgtcgt ggtattccac acagcattgc ctgaccaagg   2400

cactcacttt atggctaaag aagtgtagca gtagacttat gcttatggag ttcactggcc   2460

ttatgttccc catcatcctg aagcagctgg attgataaga gtggtggaat ggccttttga   2520

agtcacaatt acaacaccag tgaggtgaca atactttgca gggctgggac aaagttatcc   2580

agaaggccgt gtatgctcta aatcagcatc caatatatgg tactgtttct cccatagcca   2640

ggattcgtgg gtccaggatt caagggatgg aagtggaagt ggaaatggca ccactcacca   2700

tcacccctag tgatccacta gaaaattttt gctcctgttc ccacgacatt atgttctgct   2760
```

●

```
ggcctaaagg tcttagttcc agaggaagga aggctgccac caggagacac aacaacgatt 2820

ccattaaact ggaagttaag attgccacca ggatactttg ggcttctcct cctgtcttta 2880

agtcaacagg ctaagaaggg agttacagtg ttggctggga tgattgactc agactatcaa 2940

gatgaagtca gtctactact ccataactgc ggcaaggaag agtatgcagg taatacagga 3000

aattcattag ggcatctctt agtattacca tgccctgtga ttaaggtcaa tgggaaacta 3060

caacaggcag gactacaaat ggcccagacc cctcagaaat gaaggtttgg atcactccac 3120

caggaaaaaa aaccacaacc tgctgagctg cttgctgaag caaagggaa tacagaatgg 3180

gtagaagaag gtagtcatca atatcagcta cgaccacgtg accagctgca gaaatgggga 3240

ctgtaattgt catgagaatt tcctccttct tttgctaaaa tcatgtttgt gcatgtatac 3300

acttgtacta agaaaatatc ttcattttat ttcctttttc tctatgatgt gacataagat 3360

ttattgactt catagcagca tttaagtatt gttaacttta tataatagta tttgggttgg 3420

ggattggtgc ctttctggtt gtatgaagaa tagttgtatt atgttaggtg taattatgac 3480

attattgtct ttaagattat gtatgacctc aggaggtgtg tatgggttca agttgacagg 3540

ggttggagtt gtgattgtta atgctctgtg tcaacttgat tggattgaag gatacaaagt 3600

actgatgaat cccctaatga ttttggtaaa aatcattaag ttaaggtgga tacacatctt 3660

gtcatatgat caaatggttt cgcgaaaaat caataatcag acaacaagat gtgcgaactc 3720

gatattttac acgactctct ttaccaattc tgccccgaat tacacttaaa acgactcaac 3780

agcttaacgt tggcttgcca cgcattactt gactgtaaaa ctctcactct taccgaactt 3840

ggccgtaacc tgccaaccaa agcgagaaca aaacataaca tcaaacgaat cgaccgattg 3900

ttaggtaatc gtcacctcca caaagagcga ctcgctgtat accgttggca tgctagcttt 3960

atctgttcgg gcaatacgat gcccattgta cttgttgact ggtctgatat tcgtgagcaa 4020

aaacgactta tggtattgcg agcttcagtc gcactacacg gtcgttctgt tactctttat 4080

gagaaagcgt tcccgctttc agagcaatgt tcaaagaaag ctcatgacca atttctagcc 4140

gaccttgcga gcattctacc gagtaacacc acaccgctca ttgtcagtga tgctggcttt 4200

aaagtgccat ggtataaatc cgttgagaag ctgggttggt actggttaag tcgagtaaga 4260

ggaaaagtac aatatgcaga cctaggagcg gaaaactgga aacctatcag caacttacat 4320

gatatgtcat ctagtcactc aaagacttta ggctataaga ggctgactaa aagcaatcca 4380

atctcatgcc aaattctatt gtataaatct cgctctaaag gccgaaaaaa tcagcgctcg 4440

acacggactc attgtcacca cccgtcacct aaaatctact cagcgtcggc aaaggagcca 4500
```

tgggttctag caactaactt acctgttgaa attcgaacac ccaaacaact tgttaatatc 4560

tattcgaagc gaatgcagat tgaagaaacc ttccgagact tgaaaagtcc tgcctacgga 4620

ctaggcctac gccatagccg aacgagcagc tcagagcgtt ttgatatcat gctgctaatc 4680

gccctgatgc ttcaactaac atgttggctt gcgggcgttc atgctcagaa acaaggttgg 4740

gacaagcact tccaggctaa cacagtcaga aatcgaaacg tactctcaac agttcgctta 4800

ggcatggaag ttttgcggca ttctggctac acaataacaa gggaagactt actcgtggct 4860

gcaaccctac tagctcaaaa tttattcaca catggttacg ctttggggaa attatgaggg 4920

gatctctcag tacaaagtac tgatcttggg tgtgttggtg agggtgttgc caagagatat 4980

taacatttga gtcagtgggc tggggaaggc agatccaccc ttaatctggt gggcacaatc 5040

taatcagctg ccagcgaata taaagcaggc agaaaaatgt gaaaaggaga gatgggccta 5100

gcttccagcc tacctctttc tcccatgctg gatacttcct gcccttgaat attggactct 5160

aaggtcttcg ctttcaggac ttggattggc tctccttgct cctcagctta cagatggcct 5220

attgtggtac cttgtgatca tatacgttta tacttaataa attccccttt atatatatat 5280

atctatgtat atcctattag ttctttccct ctagagaacg ctaatacacc atccttgatt 5340

aaatcccttc accctctctc catctttgta aaaattctcc tcattaaatt attgttcagt 5400

g 5401

<210> 634

<211> 3526

<212> DNA

<213> Homo sapiens

<400> 634

attttctgg ctccgcgggc agcggggccg tggcgctcgg acggtctggg attcgggcgc 60

cgccgcggaa ccggaataag aagggagagc gcccggctcg gtcctcggtc tccaccgcgg 120

cccggaagga atccgggcag cctccgcgga gatacttgcc agaactaata cagctgatga 180

aatacctgac cttttctgct ccagcttgag tattcaaaga cagtagccat ctgacttcag 240

ttatttattc aagatgcaga aaagacaagg atattgcagt tattgccgtg tgcagtataa 300

```
taacctggaa cagcatttgt tcagtgctca gcacaggagt ttgaccagac agagtagacg  360

tcaaatatgt accagtagtt tgatggaacg tttcttacag gatgtactgc agcaccaccc  420

atatcattgt caagagagca gttcaacaca agatgagaca catgtgaata ctgggtcatc  480

gtctgaagtg gtgcatttgg atgatgcttt ttctgaagaa gaggaagagg atgaggataa  540

ggttgaggat gaggatgcta ccgaagagag accatccgag gtttcagaac ctattgaaga  600

gttacattcc agacctcata aatctcagga aggcacgcag gaggtttcag ttcgaccatc  660

agttattcaa aaactggaga agggacagca gcagcccttg gagtttgttc ataaaattgg  720

ggccagtgtg agaaaatgta acctagtaga tattggtcag ctacaaata atagaagcaa  780

cttggtacgc cccccagtga tttgtaatgc tcctgctagt tgtttacctg aaagctctaa  840

cgatagacca gttacagcta atacaactag tttaccacca gcagctcatt tggattcagt  900

tagcaaatgt gacccaaaca aagttgagaa atatcttgaa cagccagatg gggcctctag  960

aaatcctgtg ccatcatccc atgtagaaac tacttcattt tcgtatcaga aacataaaga  1020

atcaaatagg aaatctttac gcatgaattc agataagttg gttttgtgga aagatgtaaa  1080

atctcagggt aaaactttat cagctggctt gaaattccat gaacgcatgg gtactaaggg  1140

ctccttaaga gttaaatctc cttccaaatt agcagtaaac ccgaataaaa ctgacatgcc  1200

ttctaataaa ggaatctttg aagatactat tgcaaagaac catgaggaat tcttttctaa  1260

catggattgt acccaagaag aaaagcattt ggttttttaac aagacagcct tttgggaaca  1320

gaagtgctca gtgagttctg aaatgaagtt tgattgtatc tctcttcagt cagcatctga  1380

tcagccccaa gagactgcac aagacttaag tctttggaag gaggagcaaa ttgaccaaga  1440

agataactat gagtctagag gttcagaaat gagttttgat tgcagttcct cttttcattc  1500

actgactgac caatctaaag tgagtgccaa agaagtaaac ctttccaagg aagtacgtac  1560

tgatgtacag tataagaata ataaatctta tgtttctaaa ataagttctg attgtgatga  1620

cattcttcac ttggttacca accaatccca aatgattgtt aaagaaataa gtcttcagaa  1680

tgcaaggcat attagcctgg ttgaccaaag ctatgaatct agtagttctg aaacgaattt  1740

tgattgtgat gcttcacctc agtccactag tgactacccc caacaatctg taacagaagt  1800

aaaccttcct aaggaagtgc acattggttt ggttgataag aactatggtt ccagtagctc  1860

tgaagtaagt gctgattctg ttttcccact gcagtcagtg gttgacagac ccccagtggc  1920

tgtcacagaa acaaaacttc ggaagaaggc tcataccagc ttggttgata actatggatc  1980

gagttgttct gaaacaagtt ttgattgtga tgtttctctt gagtcagtag ttgatcatcc  2040
```

ccaactgact gtcaaaggaa gaaacctgaa aggtagacaa gtccacctaa aacataagaa 2100

gcgtaaaccc agtagtgcta aagcacatct tgattgtgat gtctcacttg ggacagttgc 2160

agatgaatcc cagagggctg ttgaaaagat aaatcttctg aaggagaaga atgctgacct 2220

tatggatatg aactgtgaat cccatggtcc tgaaatgggt tttcaggctg atgctcaatt 2280

agctgaccag tctcaagtag ccgaaataga gcgtcagaaa gtggatgttg accttgagaa 2340

taagagtgtt cagtctagcc gttcttctct gagttctgat tctccggctt ctctttatca 2400

ttcagctcat gatgagcctc aagaagcttt ggatgaagta aatcttaaag agttaaatat 2460

tgacatggaa gttaggagct atgattgctc cagctctgag ttgacttttg attctgaccc 2520

gcctcttctg tcagttactg agcagtctca tctggatgct gaaggaaaag aacggcacat 2580

tgacctggaa gatgagagct gtgagtcaga tagttctgaa ataacttttg attctgatat 2640

tcctctttat tcagtaattg accaacctga agtagctgtt tatgaggaag aaactgttga 2700

tctggaaagt aaaagtaatg aatcttgtgt ctctgaaata acttttgatt ctgatattcc 2760

tcttcattca ggaaatgatc accctgaagt agctgttaaa gaagtaattc agaaagaaga 2820

gtacattcac ttagaaagga agaatgatga acccagtggt tctgaaataa gttcggattc 2880

ccatgcccct cttcattcag tgactaattc tcccgaagta gctgttaaaa agctaaatcc 2940

tcaaaaagaa gagcaggtac acttagaaaa taaggaaaat gaacctattg attctgaagt 3000

aagtttggat tataatatca tttttcattc agtgactgga cgttctgaag atcccattaa 3060

agaaataagc cttcacacaa aagagcacat gtacttagaa aataagagtg tttttgaaac 3120

aagtttggat tctgatgtcc ctcttcaggc agcgactcac aaacctgaag taattgtcaa 3180

agaaacatgg cttcaaagag aaaagcacgc tgaattccaa ggtagaagta ctgaattcag 3240

tggttcaaaa acaagtttag attctggtgt ccctcattat tcagtaactg aacctcaagt 3300

agctgttaac aaaataaaca gaaagaagca atatgttcta gaaaacaaga atgataaatg 3360

tagtggttct gaaataattt tggattctaa tgttccacct cagtcaatga ctgaccaacc 3420

tcaactagct tttttgaagg aaaaacatgt taatctgaag gacaaaaaca gtaaatcagg 3480

tgattctaaa ataacttttg attctgaaca acttcaggaa gcggtt   3526

<210> 635

<211> 4695

<212> DNA

<213> Homo sapiens

<400> 635

agggcaacgc	gagggaagaa	ggtggcggct	cccactcgct	tctccctcgg	gtcgggtccg	60
agctgccagg	ccgcatgcca	ctccctgacg	gggcgcggac	cccgggggggc	gtctgccggg	120
aggcgcgcgg	cgggggctac	accaaccgga	ccttcgagtt	tgacgacggc	caatgcgccc	180
ccagggtcca	ggtggagttc	tacgtcaacg	agaacacctt	caaggagcgg	ctcaagctgt	240
tcttcatcaa	aaaccaaaga	tcgagcctga	ggatccggct	gttcaacttc	tccctgaagc	300
tgctcatctg	cctgctctac	attgtgcgcg	tcctgctcga	tgacccggcc	ctgggcatcg	360
gatgctgggg	ctgcccaaag	cagaactact	ccttcaatga	ctcgtcctcc	gagatcaact	420
gggctcctat	tctgtgggtg	gagagaaaga	tgacactgtg	ggcgatccag	gtcatcgtgg	480
ccataataag	cttcctggag	acgatgcttc	tcatctacct	cagctacaaa	ggcaacatct	540
gggagcagat	cttccgcgtg	tccttcgtcc	tggagatgat	caacactctg	cccttcatca	600
tcacgatctt	ctggccgccg	ctgcggaacc	tgttcatccc	cgtctttctg	aactgctggc	660
tggccaagca	cgcgctggaa	aacatgatta	atgacttcca	ccgtgccatc	ctgcggacac	720
agtcagccat	gttcaaccag	gtcctcatcc	tcttctgcac	cctgctgtgc	ctcgttttca	780
cggggggttg	caggacctgc	ggcatccagc	acctggagcg	ggcgggcgag	aacctgtccc	840
tcctgacctc	cttctacttc	tgcatcgtca	ccttctccac	cgtgggctac	ggtgacgtca	900
cgcccaagat	ctggccatcg	cagctgctgg	tggtcatcat	gatctgcgtg	gccctcgtgg	960
tgctcccact	gcagttcgag	gagctcgtct	acctctggat	ggagcggcag	aagtcagggg	1020
gcaactacag	ccgccaccgt	gcgcagacgg	agaagcacgt	ggtcctgtgt	gtcagctccc	1080
tcaagatcga	ccttctcatg	gacttcctga	cgagttcta	cgcccacccc	cggctccagg	1140
actattacgt	ggtcatcctg	tgccccacgg	agatggatgt	ccaggtgcgc	agagtcctgc	1200
agatccctct	gtggtcccag	cgggtcatct	acctccaggg	ctctgcactc	aaagaccagg	1260
acctcatgcg	agccaagatg	gacaatgggg	aggcctgctt	catcctcagc	agcaggaacg	1320
aggtggaccg	cacggctgca	gaccaccaga	ccatcctgcg	cgcctgggcc	gtgaaggact	1380
tcgcccccaa	ctgccccctc	tacgtccaga	tcctcaaacc	tgaaaacaag	tttcacgtca	1440
agtttgctga	ccacgtggtg	tgtgaggagg	agtgcaagta	cgccatgccg	gcgctgaact	1500

gcatctgccc ggcgacctcc accctcatca ccctgctggt gcacacgtcc cgcggccagg 1560

agggacagga gtctccggag cagtggcagc gcatgtatgg gcgctgctcc ggcaacgagg 1620

tgtaccacat ccgcatgggt gacagcaagt tcttccgcga gtacgagggc aagagcttca 1680

cctacgcggc cttccacgcc cacaagaagt atggcgtgtg cctcatcggg ctgaagcggg 1740

aggacaacaa gagcatcctg ctgaacccgg ggccccggca catcctggcc gcctctgaca 1800

cctgcttcta catcaacatc accaaggagg agaactcggc cttcatcttc aagcaggagg 1860

agaagcggaa gaagagggcc ttctcggggc aggggctgca cgagggtccg gcccgcctgc 1920

ccgtgcacag catcatcgcc tccatgggga cagtggccat ggacctgcag ggcacagagc 1980

accggcctac gcagagcggc ggtgggggcg ggggcagcaa gctggcactg cccacggaga 2040

acggctcggg cagccggcgg cccagcatcg cgcccgtcct ggaactggcc gacagctcag 2100

ccctgctgcc ctgcgacctg ctgagcgacc agtcggagga tgaggtgacg ccgtcggacg 2160

acgagggggct ctccgtggta gagtatgtga agggctaccc tcccaactcg ccctacatcg 2220

gcagctcccc aaccctgtgc cacctcctgc ctgtgaaagc ccccttctgc tgcctgcggc 2280

tggacaaggg ctgcaagcac aacagctatg aagacgccaa ggcctacggg ttcaagaaca 2340

agctgatcat cgtctcggca gagacggccg gcaatgggct gtacaacttc atcgtgccac 2400

tgcgggccta ctacagatcc cgcaaggagc tgaaccccat cgtgctgctg ctggacaacg 2460

agcccgacca ccacttcctg gaagccatct gctgcttccc catggtctac tacatggagg 2520

gctctgtgga caacctggac agcctgctgc agtgtggcat catctatgcg gacaacctgg 2580

tggtggtgga caaggagagc accatgagcg ccgaggagga ctacatggcg gacgccaaga 2640

ccatcgtcaa cgtgcagacc atgttccggc tcttccccag cctcagcatc accacggagc 2700

tcacccaccc ttccaacatg cgcttcatgc agttccgcgc caaggacagc tactctctgg 2760

ctctttccaa actagaaaag agggagcgag agaatggctc caacctggcc ttcatgttcc 2820

gcctgccgtt cgccgccggc cgcgtcttca gcatcagcat gttggacaca ctgctctacc 2880

agtccttcgt gaaggactac aagatcacca tcacccggct gctgctgggc ctggacacca 2940

cgccgggctc ggggtacctc tgtgccatga aaatcaccga gggcgacctg tggatccgca 3000

cgtacggccg cctcttccag aagctctgct cctccagcgc cgagatcccc attggcatct 3060

accggacaga gagccacgtc ttctccacct cggagcccca cgacctcaga gcccagtccc 3120

agatctcggt gaacgtggag gactgtgagg acacacggga agtgaagggg ccctgggggct 3180

cccgcgctgg caccggaggc agctcccagg ccgccacac gggcggcggt gaccccgcag 3240

```
agcacccact gctacggcgc aagagcctgc agtgggcccg gaggctgagc cgcaaggcgc  3300

ccaagcaggc aggccgggcg gcggccgcgg agtggatcag ccagcagcgc ctcagcctgt  3360

accggcgctc tgagcgccag gagctctccg agctggtgaa gaaccgcatg aagcacctgg  3420

ggctgcccac caccggctac gaggacgtag caaatttaac agccagtgat gtcatgaatc  3480

gggtaaacct gggatatttg caagacgaga tgaacgacca ccagaacacc ctctcctacg  3540

tcctcatcaa ccctccgccc gacacgaggc tggagcccag tgacattgtc tatctcatcc  3600

gctccgaccc cctggctcac gtggccagca gctcccagag ccggaagagc agctgcagcc  3660

acaagctgtc gtcctgcaac cccgagactc gcgacgagac acagctctga gccagccctg  3720

cacggagctc aggccaccaa gcccgggggtc ctcaggaagg acgtggagga gcgtgtgagg  3780

acacggtggc actagcgtga ccctggggat ggcacactct actcaccatg gctcctggga  3840

ctccaccctg gaaaggagcc cctcatgcgg ggggagggcc agctcacccc tgggcacctg  3900

caggctagtg aggagagttt tttaacctat ttttacacgt cgatgcagtc cacttctctt  3960

tacacagatg taccgcaact cgtgaccagg gctggctggg agggcaacgc agggactgga  4020

cgccctacag ggccgagccc aggctgtgct ggagggtggg gctggggtgc atggggaggg  4080

gagcagaacc cagaacccag gagccccgcg tgggccacac ccaactcaga gccggcctga  4140

gcgttcacgg ccaggcagcc tcgcttcctt gcagccaagg gctggggggcc agggctgctg  4200

ttctgcactc tggggtgggt gaggggggacc ctgggctgtt tgctgtccca agcccccttct  4260

ggaagttaga agcagcaaag ggcccgggga agccgggcat gtgagagggg tgcgtcccca  4320

ggtcccccag agggccctgt cgccgaggac ctttctgaag gaagcagaag acgccatttc  4380

ctctacttca cactgaactg tcccagccac tgcatctagg gggcattggg cggaagatgg  4440

tgcatttcca tggaccattt tacacttacc ttttaaagca aagcctcatt ttctaaaccc  4500

ctgacttgtg aagcacaatt cagcctccgg gctgggccac gtggagagag aggatcttct  4560

cagcaaggcg agatcccggg cggcggctga catcaggagc gccaccctgc gtcctttgct  4620

gctggttcct tactggtttg tacggtcagc gctggaaact tctattaaat ggatgcattc  4680

tggaggcatg aagtt                                                    4695
```

<210> 636

<211> 3498

<212> DNA

<213> Homo sapiens

<400> 636

```
gattggccgg acgtggtggc gtacacctgt agtcctagct acccggaggg ctgaggcagg   60

agaatggcgt gaacccggtg ggaggagttt gcagtgggcc gggatcgcgc cactgcactc  120

cagcctgggc gacagagcaa gactcggtct caaaaaaaaa aaaaaaaaa aaaaaaggca  180

ggccttactc cgtcccaaac tgaaaggatt aaatggcttt acctgggaga agataaccat  240

cctgccctcc attgctaccc ccacatactg tccatgttct caggggggtac tgtgagtcct  300

gggatctttg gggttgccca cctgcctgtg gtagttatgg agacccccca ggtgttgagg  360

cagggctggg gtgtcccctt ccaaccaggc tgtcaaggcc ccaactccgg ggcagaggca  420

gtggcagggc agccagggtt gcgccagagc ctgagcaggt tgaggtgggg tcaggcaggg  480

ctgggagtca gggcaggggc agcagcagtg gacccgctat gcacacatcg tcttctccaa  540

ggtttgtgtg cagaacatcc tgcccatgct gccccagcag cttcagttgg cacctgcccc  600

agtccagcct ctgggaacca tgcagcagct cccagcggcc ctgcacccac caccagcatc  660

cgtttcacct gcagttgaag atccgtgagg tgcccagaag atcatgcagt catcagtccc  720

acggagcagc ccgtgaggct gaggctcctc ccactggacc gccccccaac tggcaccact  780

gctgcccctg cccctactct cagcctcacg tgactctcgg gcagaggcag tggtggggca  840

gccagggcag cgtcaagagt ctgagccagg tgaggtgcgg tcaggacccc cacagggctg  900

ggagtcaggg caggggcaga acaaaccttg gaggggaaga tgcgtgcata gtgggcctgg  960

agggcggctg tggcctagtg acaggaaga agcagtgggc ctggaagagc tgcatgatca 1020

gggccggcac tggtccaggg cacgtgcagt gaagaggaca gcgccttctc ggtctccggt 1080

tccctgagcc tgtccttggc ttctccacct gtacaggcaa aggggaagct gtccccatca 1140

cacatggcac acttgggggt gttgggcttt ggactgcagc tggagcatct tctcatcttg 1200

catttgggcg tggtggggtc ctccagtgtg ggatccatgt ccgtggggtt ccctctgccc 1260

cgaccccgaa agcccagtca gtttctcttc aggctctgcc ccccgggtgg ctcagcccag 1320

ctcctgccta ggaaagcctt agtgttggga gggaccctga tgactgagga gcctggtagc 1380

tccaggtcgc ccacactttc aggtctcttg caccagaagg tggcaggatc cattgggagg 1440

aaacaggtca ccttggaagg cgtccctggg cccccatccc caggggtagg ggccgtaggg 1500
```

ggcccgctct gctgccttga ccagactcct gggcattgaa ggctcctggg cccagtaaga 1560

aggaggtggg tgccaaggtt gaggaggaag catccgagta tgtgtaggag gaggacaagg 1620

tgggaccata gactttgcca aaagctgcag gtggatcggg ggaccctggg ggctcaggat 1680

ccagcaaggg gcggcaggag taaaggagga aggaatgaca ggtgcaaata ccttcccacc 1740

aaagcccttg ttgccctctg gctcctcccc agagttgtcc ccactctcag tcggtcaccc 1800

actccttgaa cttgagatcg gtgtcagtgg tgctaaagcc atcatcagca atgacatcat 1860

caccccctcc tcctcatgga tgaccgtgtg ctcctcgtca cttgctatgt cctcactggc 1920

catgtgctgg gaatgagcag ctcaggtggg cagcagcagg gctgcccact ggtcacctcc 1980

ctcaccaggg gctgcaaagt ggcctggagc tccatactga gtagaaggct ttgggccaga 2040

gtatgatgca gtgccagaca ccacctgtgt cagttcccgt agtgcctgac ggtctatttc 2100

cctgccgtcc aggctgtgta ccccactgtg ggagaaggct tgggccaggc taagccaggt 2160

tccctgactg tgtgcagcca ttctgcccca cagaagctgc tccttggtat ccgagctctg 2220

aagtgtttgg gctgcaactg acaggagttc agaggacacc ccaggggcag tggcagtgcc 2280

cgtctctgat attctccgct cccacgagcc cttgttacac tcctgctagc ccctggcttg 2340

tgggcttggc ctctgagctg gacttctttc ggtccttgtt gcaagtgggc caccttcacc 2400

tggaaggcca ggtcgtggta tttctgcgtc tcattgggcc ccagggtgta ccaccgcttg 2460

ctcagcatct ggctgacggt ccggttgtcc tggttggggt gaccctggtg cgccctgcca 2520

gggcctggtg ccgcttgctg aagatcatga ccgccactca tgggccaccg gatgtggtcc 2580

ttgtcccatt tgttgggggct gcatccatcc ttctcagaag atgagtcctg ttccttgcgc 2640

agggcactga gggactgggc ctgacatcat ctgggtggta gaggcaactg ggtgtcagga 2700

gacatgatgg agaggaaagc atcatcatgg tcattctctg tctcactgtc cagcagggac 2760

tcccctgagg ggcccagggc tcctcctcca tggtgggagg tgagctttta ccaggttcca 2820

ccacccccaa agtgtgtggg gttgcgggcc ctgggctttc agggcaggtg gctccagggg 2880

gccacccagg gtcagcactc cctgtcccac ctggtggaca ctcatgagca acagctgctg 2940

acttggcagg ttctttgctc tggttggagg ccactgagtg actggcaggt tgctggacct 3000

cacatagctg cagggagggg tcaggaaggg gacagagtac caggagaaca cagccacaga 3060

gcaaggttcc acgttcctcc acacaaacat gctgacgcca ctggaggcct cgctggacgc 3120

agacatcagg ggcctgtggg ccaagtacat ggtctgggca gggggttcct ggcaggggct 3180

cacacctcct cagccccctc ctcagccaag gcagcttgga cccatggaag tggggatgga 3240

```
aggggagcat gaggccaggc ctcaagtttt tgtttttgtt tttttttttt tttgagatgc   3300

agtttggcag gctggagtgc agtggtgcga tctcagctca ctgaaacctc cacttcctgg   3360

gttcaagcaa ttctccggcc tcagcctccc atgtatatgc acctttactg ctgaatatta   3420

tatattttct tatgctttca tgtgattgat tagcattctt ttttttttttc tttttgagac   3480

agagcaagac tcggtctc                                                 3498
```

<210> 637

<211> 3833

<212> DNA

<213> Homo sapiens

<400> 637

```
acaatataat aataatgtaa cataaaatta ccatgtcatt ggtgggacac acaatttact    60

aaagtgtaaa aaccataaca taactcttgg aatctctata gaactacaaa atatagttga   120

tgcttgaaca atgcaggcat taggagtggc aactccacaa agttgaaaat ctgcatataa   180

ctttagactc tccaaaaact taacttctaa tagcctacca ttgaccagaa actttactga   240

taatgcagta gattatcaca tattttgtat ctgcattata tactgtattt ttaaaataaa   300

ataatctaga gaaaagtgag tattgacggg gcgtggtggc tcatgcctgt gatcctagca   360

ttttggaggg ctgaggtggg tggaacacct aaggtcggga attcgagatc agcctggcca   420

acatggcgaa atcccgtctc tactaaaaat ataaaagtta gctgggtgtg gtgtcaggca   480

cctgtgatct cagctacttg tgaggctgag gcgggagagt cgcttgggcc cagggaggtg   540

gaggtttcag tgggccgaga tcacaccact tcactccagc ctgagcaaaa gagcgagact   600

ccgtctcaaa aaaaaaaaaa aaaaaaaaaa aaagtgaatg ttaagagaat cataaggaaa   660

agaaaatata tttactactc attaagtgaa agtggagcat cctaaagatc ttcatcctca   720

tcatttccag attgagtagg ctaaggaggg ggaagaagaa gagggcttgg tcttgctgtc   780

tcagtggagg cagaggcata agaaaaacgt ggataaatgg atccatgcag ttcaaacccc   840

tgttgttcaa gggccagctg tatgcttaaa cacatccctg ggggttgtaa aactaatgtt   900

actgttgttt tcattttgca attttttccat cttgatataa aagcaaaagt aaagctaatc   960
```

tatgtacaat ttattatagg tcaactgaga atggcagagg actcatccca cctttgccac 1020

atggtgactt gccccactcc cccaggtgac cttgctcgtg catgtggata tttgctcaga 1080

ttaagaatgt ttcccacaaa attgcttact ctctttcatt ctgtccgtgg ttgcttgtgg 1140

tttatttgtt gataactgag actatttaaa gattgccaaa acaaaagcca tttcttttct 1200

ccccgaatag cctcattttt tctattccct ttttcccctc ctattaacat ttctggggac 1260

tctaaagcag agctcaagat ggttcaggac cacggagagc gcaaggaagg ggaactacca 1320

aagcacttta gtcatgcagg tggggaaaga gatgatccta aaattgtttt tgtttttctg 1380

ttttttttgag agggagtctc gctctgtcac ccaggctgga gtgcagtggc acgatcttgg 1440

ctcgcttcaa cctccgcgtc ccgggtccag gcgattctag cgcctcggcc tcctgagtag 1500

ctgggattgc aggtgtgcac caccatgccc agctaatttt ttgtattttt ggtagagact 1560

gggttttgcc atgttggcca ggctggtctc caattcctga cctccggtgg tccaccccccc 1620

tcagtctccc aaagtgctgg gattgcaggc gtgagccacc acgcccagcc aatagtggaa 1680

ttgttgccgg acaatattta tttaaaagac attattgtaa agagtaacag tgtaattctg 1740

gctccttgaa atttgagggg aatgattttt ctggacattc gaccagtgct ttctaaattt 1800

ctccactgaa ttctatctaa tgacagatga gaggacactg aaagtaggag tagccataag 1860

tcaccagtgc aaaatgtctt ttgaagtttg catttattga ttgctaccat ttatgtaaag 1920

ttttacagtt ttgacagtca tagggttcac caatccacca tagaagagaa ttaagtcatg 1980

cggacacagc agggtttaga atggatgagt agaggagtgt gtgcaggctc cagtccccaa 2040

agtctctagg actgtcctag aacctgcagc tcatctgtca attctgtcaa ctactcagga 2100

tcctctcaag aattatcccc ccatacccac cttttaaatt tcctcaagct agtttcattt 2160

gagttttgtc acttgcaact gaatgagccc tgctaatgca gatagattca attgagaagg 2220

ggaattctag gctaggagta caaggttaca ggcaaggaga caggaacata gcttgggatt 2280

tcctgggggca gtgagaaaac tgactttaaa aaaatggaat ggtttctaaa atgtttgtac 2340

aacttctctg tatggcaatg gggtaggagt ataaattctt tcagcttctt ctgagggcag 2400

ctgaacaaga agtataaaaa ttttgaatgc tgataacatt tgacctagca attccatctc 2460

tagaaataaa ttctacagta gtaatcttaa aaacgtattc actgaaatgt tattttctca 2520

tagaaaatgt cgaaacaaca tatgtgtcca tcaatagaga acttgctaaa tgatttatac 2580

tacctttaca tattgaaata cgcatagccg tggaagataa tttagtagat ctatatgtcc 2640

cattatggaa caatccccat ggtggggggga aaagtaaggt gcagaactgt atcatagatg 2700

```
ttctctctct ctctcttttt tttggaaagc acatgtatgc ttttatatac acagaaaaat  2760

tctagaatgg caaacaagat atctttgcaa tagttttttt ctgggagggg actcatttaa  2820

aaaaattctc ccatattgct tgttttgttt tgttaaagac atccatgtat tcctacttgg  2880

gttaagccat gataactaaa tatgattaaa gttcagaaca ataaaaacct tagagatgta  2940

tacataaata tcacttgctt aggaatttct aggtaggtac tattttaagc cctctacata  3000

tattatttca ttcaatcctt ggagcaactc taggagggag gtgttatcct ctaattgcag  3060

atgaggttga tgaagcttaa agagtaatga tgccttgagt ccatcctctg gctccaaagc  3120

ccttgtattt aactgttctc ccttttgcat ccctgtgcta aagtgacttt gctataatat  3180

ccacaaggaa gaatttctgt gtaaaaatta gacttccttg caggcagtct atcagtgata  3240

tccaataaag actcaataat ggctaacaat acaaaccaca cacacaagaa aaacttctcc  3300

ttttgtgcca ggtacttaga ttaggtgtag tggttttctt aaactgatta tcaaggtaaa  3360

caccacctca tacatttcag cagagagcag tggtttctct ctccagcagt gggagccatt  3420

gaatcaggac aatgccacac agttgggctt tcatgttaga tagatcactc ttgtggtttt  3480

gggggatggc attataagag aggagactgg agacaggggg gctattgtca tgcagatttg  3540

ttggatgtcc acccagcatt cacttttttcc atcttttgcc aggggtacac tacacaacat  3600

caccagtcat ttcatagaat ggcaattaga ttaggcttag gtctgcactg ccttccttca  3660

ctccgctctg tcacttgcca tcattgtaaa tgctgacaac ttagtgcctt tcatgcttca  3720

agtatcaata agataggaat agtaatagta tcacattgaa ttattgtgga gttttgaaca  3780

gatgatactt gtgttatcag tgctcaataa atattagctg tcctcttcct tat          3833
```

<210> 638

<211> 4012

<212> DNA

<213> Homo sapiens

<400> 638

```
ctgaaccaaa tgaagaggat ctggaaggca aagcactaag atcatagtga agacctgcct   60

ccccccttctc cttgtgtccc accagcctcc ctgctggcct gaccaggccc catactccag  120
```

```
tctcccccaga gaccccaagc tgaagattct gtgggtctgc cccattgctg ggcacagcag    180

agcctggatg gaggcttgtt gtcttctgca gttgccccaa aggttgctct tgctgggggc    240

agccgccctg actgcaactg ctttggagac agccgacctg cggaactgt  gcgggcagac    300

gtggcagggg gacgggctgc tgctgcgctc gcacgccgca tcgcgcaggt tctacttcgt    360

ggctccggac accgactgcg ggctctgggt gcaggcggca gcccccggcg accggatccg    420

cttccagttc cgcttcttcc tggtctacag cctgaccccc gcgcccccgg cgctcaacac    480

ctcctccccg gccccggccg acccgtgcgc ccccggctcc tacctgcggt tctacgaggg    540

cccgccgggg gcgccccggc ccctggggtc cccactgtgc ggcctgaaca tcccggtgcc    600

tgtggcatcc tccggaccct ttctaggcct gcgcctggtc acgagaggcc gccagccccg    660

cgtggacttc gtgggcgaag tcacctcttt ccgtctggga ccttgtggtg cctacttccg    720

ctgccagaat ggcaggtgca tcccctcaag cctcgtgtgt gacccctggg gcatggacaa    780

ctgtggcgat ggcagtgacc agggctcctg gtcaccagct gactgcagag gtccctctcc    840

ggtgcccagc cagacaggaa gtacagatgc ccatacctcc agatccctga ctccctcccc    900

agctctcggg tctgcaggat ccctctggat tgcagctgag aggagttccc cagcaggcag    960

ggaccccacg agacaagacg cagctttgga aggctccact gagtgaagcc ctcatcaaag   1020

actcaggagg cccctggcgg ggatagcacc gtttattaag aaaaatcaag acaaagacca   1080

caggagggtc ccttctagga cacagaggcc aggcgtccca accccacagt ctggggggcca   1140

ctggcaggat ggcacttgag ctggatcttc aggctcctgc agatggggca gggtggtcat   1200

atcccccctcc tctctctctc agtcgtgagt cctgccttcc cccacctaag gcactagctc   1260

ttcctgagca ccagcggcat ccgtccgtcc gttgtctgtt ggaggagtcc ctgggccttc   1320

acttccagat gggtgggggat gtggcctggg gtgggcgggg cccggtgggc ggggccctat   1380

cagtgctggg ctctgcctgt agcagctcct ggtaagagtt ggggtgggcc ttcccttaca   1440

gcccctgagg gagggacccc aggctgtgtg ctggcaggag ggggtgggaa tgcaggccag   1500

gaggacgtgg taggagggg  agtctgccag aggaggtgcc aggggctggg tggaggtggg   1560

tgggggtgct gaaaaacgag ctggtgggga tggggaccgc ctgcccaggg gtgagctgcc   1620

ttttgctcca cagccggcac taaagacaat tcccaatcct gagtgggtgg cagagactcc   1680

tgcgatgccc gtctcaggta gctgtggggc accagcccac aagccgaggt tggctctcct   1740

aggagtgaga actgcccaag ggctgcagaa acaggccacc cagctctatc tgggggctcc   1800

atcggtgggt aggggggacag tggggggcagt tctgggccca cccagccact gttcctgacc   1860
```

●

```
ccaagtcctg gtgactttct gaggtgccca ctcccatcca acctgccttg ctggccagcc  1920

ttgtggcttt gcccagctgt gtgtgtgagg gtggcatgcc cacctccagt ccagcccagg  1980

gcggtagcag caaagcgtgg catcgcctcg gtttcttaca aaaattcata ataatattaa  2040

taataatata ctcgacattg tcgggctggg gcgtggcccg ggagtccgtg tggggcaggc  2100

aggtgcctac gaggggcagg ggcgtgtgtt ggccccggcc tgggcgcggt gctgcaggtc  2160

caggggctgt ggggggcgggg cgccgggtcg ggccgagtgc agcaccaggt tcttgacaca  2220

gcctgtgatg cccgaggaga atctgccccc ggtcagcgtg gccacgtcag gggctccgcc  2280

tgccgggagg tgagaggaca gggcctgtgg gctccagcag cccaggaggc gaggaaggct  2340

gggcgagctc tagccctaag ggagtgccgt tcctgcccct gccctgagaa ggagccccag  2400
```

●

```
acttaccgat gtagacgctg cccttggcgt tgactgccac gttgggacct ggggaccggc  2460

cgctgaccag ctcctcaccg tcgacttgga tggaacctct gcggccctcc ctgcagtgga  2520

actgggtcag gcccctttcc acaaacttcc tggtcctccc cggccccacg acagagtccc  2580

ctccctctga tatcgagact ccagactcag aagtctgtcc ctgtttccca agctctttct  2640

ttcccccgct gaacgagaga tcgggcccca caaacacagc ttcctcattt ctgcacccag  2700

gtttcctccc actcctgggg cactcgcctg cccccagcgg agttcagtcc gagatggaag  2760

cccgagccct ggctggtggg ttctcccctc ccctggcttc aagttctgtc tccacagagc  2820

tcaatacctg cctctctgcc catggtaggg ggcgtcctgc cccactccag aacgctgggc  2880

cccatcccga gtgcccggca gggtccctta ccgcagtgct gtcacccggt gccactcgcc  2940

gtcattgatg gggtcctcag agaccaggcg ggcctcccca ctacccagct ggtacctgca  3000
```

●

```
gtcatccagg cccaagaagt atgagctggg gcaggaccgg ggggtggggt gctgggacca  3060

gggaagggag aggaagggcc aggtgccagg acctacctga agacaaggtg cccgtcttga  3120

agcccgaggc tgatgaagtc cttgccttgg ccggcctctc ccacctcctg ccagggaagc  3180

acagggtctc tggggtcccc agcctggaga gcagaggctg ccgaggccag ggggctctgc  3240

tttcccctcc ccccaccact ccggccacca ggaagccagc ttcctgcccc aggagcccca  3300

agagcccagc cggatcccca cactcaccac accctgccag agcaggaggc cactggctgt  3360

gctggtccga acctccggct cgatggtctc gggcacctcg gcaggctgc ggaggaagag  3420

cgggtgaggg gacagaagtc ccagattccc atcctcccca ttaggcccat gggcccttcc  3480

aatgccagtc tcaccccctg gagaagacat ggccagggaa ggcgaggaag ccatcatcgt  3540

ggaaataggc tccgtactgc ccaggggcat ctgtgggaga gaggagggtg gtgccatacc  3600
```

tgctgcatca ggcatcaaaa tccccccgtca gttcccctga cccccacctc cacgccaaca 3660

tgcaggacta gggggctccg agtctgcagt ccctggggac ccacgggggc tgccaacaga 3720

attcagggag cctatgacct tggatgggaa agcattacac ctcaatttca ctcacttctc 3780

actgaaattg agcagttctt tcaatgagat gtaggcaaga aaccaaagta gcagtggtag 3840

gacctgcaac tttgttacta gtatttgctt atcacatgac agtagctgca aatatttcaa 3900

aatatcattt acacatattg ctgctttgaa attgtggtag ctactgagat caccagatct 3960

tgttatttga tgtgttaata aagaagcaca tatatagcaa gtcaggaaac tt 4012

<210> 639

<211> 4463

<212> DNA

<213> Homo sapiens

<400> 639

atggcttcct ctacctggcg ctctacgcgc aggtgtccca gtccaaaccg tgcgagagga 60

ccggctcctg cttctcgggc cgctgtgtca actccacctg cctctgcgac ccgggctggg 120

tgggggacca gtgccagcac tgccagggca ggttcaagtt aacagaacct tctggatatt 180

taacagatgg cccaattaac tataaatata aaactaaatg tacttggctc attgaaggct 240

atccaaatgc agtgttaaga ttaagattca atcattttgc tacagaatgt agctgggatc 300

atatgtatgt ttatgatgga gattcaatat atgcaccttt aatagctgta cttagtggtt 360

tgatagtccc tgaaataagg ggcaatgaaa ctgtgcctga agttgttact acatctggct 420

atgcactgtt acattttttt agtgatgctg cgtataatct aactggtttc aacattttct 480

attcaatcaa ttcttgtcct aacaattgct ctggtcatgg gaagtgtaca actagtgtct 540

ctgttccaag tcaagtatat tgtgaatgtg ataaatactg gaagggtgaa gcttgtgata 600

ttccttactg taaagccaat tgcggcagtc cagatcacgg ttactgtgac ctgactggag 660

aaaaattatg tgtctgcaat gatagttggc aaggtcctga ttgttctttg aatgttccct 720

ctactgagtc ttactggatt ctgccaaacg ttaaaccctt cagtccttct gtaggtcggg 780

cttcacataa agcagtttta cacgggaaat ttatgtgggt gattggtgga tatactttta 840

actacagttc ttttcaaatg gtcctaaatt acaatttaga aagcagtata tggaatgtag　　900

gaactccatc aaggggacct ctccagagat atggacactc tcttgcttta tatcaggaaa　　960

acatctttat gtatggaggc agaattgaaa caaatgatgg caatgtcaca gatgaattat　1020

gggttttttaa catacatagt cagtcatgga gtacaaaaac tcctactgtt cttggacatg　1080

gtcagcagta tgctgtggag ggacattcag cacatattat ggagttggat agtagagatg　1140

ttgtcatgat cataatattt ggatattctg caatatatgg ttatacaagc agcatacagg　1200

aataccatat ctcatcaaac acttggcttg ttccagaaac taaaggagct attgtacaag　1260

gtggatatgg ccatactagt gtgtatgatg aaataacaaa gtccatttat gttcatggag　1320

ggtataaagc attgccaggg aacaaatatg gattggttga tgatctttat aaatatgaag　1380

ttaacactaa gacttggact attttgaaag aaagtgggtt tgccagatac cttcattcag　1440

ctgttcttat caatggagct atgcttattt ttggaggaaa tacccataat gacacttcct　1500

tgagtaacgg tgcaaaatgt ttttctgccg atttcctggc atatgacata gcttgtgatg　1560

aatggaaaat actaccaaaa ccaaatcttc atagagatgt caacagattt ggacactctg　1620

cagtagtcat taacgggtcc atgtatatat ttgggggatt ttctagtgta ctccttaatg　1680

atatccttgt atacaagcct ccaaattgca aggctttcag agatgaagaa ctttgtaaaa　1740

atgctggtcc agggataaaa tgtgtttgga ataaaaatca ctgtgaatct tgggaatctg　1800

ggaatactaa taatattctt agagcaaagt gccctcctaa aacagctgct tctgatgaca　1860

gatgttacag atatgcagat tgtgccagct gtactgccaa tacaaatggg tgccaatggt　1920

gtgatgacaa gaaatgcatt tcggcaaata gtaactgcag tatgtctgtc aagaactaca　1980

ccaaatgtca tgtgagaaat gagcagattt gtaacaaact taccagctgt aaaagctgtt　2040

cactaaactt gaattgccag tgggatcaga gacagcaaga atgccaggct ttaccagctc　2100

atctttgtgg agaaggatgg agtcatattg gggatgcttg tcttagagtc aattccagta　2160

gagaaaacta tgacaatgca aaactttatt gctataatct tagtggaaat cttgcttcat　2220

taacaacctc aaaagaagta gaatttgttc tggatgaaat acagaagtat acacaacaga　2280

aagtatcacc ttgggtaggc ttgcgcaaga tcaatatatc ctattgggga tgggaagaca　2340

tgtctccttt tacaaacaca acactacagt ggcttcctgg cgaacccaat gattctgggt　2400

tttgtgcata tctggaaagg ctgcagtgg caggcttaaa agctaatcct tgtacatcta　2460

tggcaaatgg ccttgtctgt gaaaaacctg ttgttagtcc aaatcaaaat gcgaggccgt　2520

gcaaaaagcc atgctctctg aggacatcat gttccaactg tacaagcaat ggcatggagt　2580

gtatgtggtg cagcagtacg aaacgatgtg ttgactctaa tgcctatatc atctctttc 2640

catatggaca atgtctagag tggcaaactg ccacctgctc ccctcaaaat tgttctggat 2700

tgagaacctg tggacagtgt ttggaacagc ctggatgtgg ctggtgcaat gatcctagta 2760

atacaggaag aggacattgc attgaaggtt cttcacgggg accaatgaag cttattggaa 2820

tgcaccacaa tgagatggtt cttgacacca atctttgccc caaagaaaag aactatgagt 2880

ggtcctttat ccagtgtcca gcttgccagt gtaatggaca tagcacttgc atcaataata 2940

atgtgtgcga acagtgtaaa aatctcacca caggaaagca gtgtcaagat tgtatgccag 3000

gttattatgg agatccaacc aatggtggac agtgcacagc ttgtacatgc agtggccatg 3060

caaatatctg tcatctgcac acaggaaaat gtttctgcac aactaaagga ataaaaggtg 3120

accaatgcca attatgtgac tctgaaaatc gctatgttgg taatccactt agaggaacat 3180

gttattacag ccttttgatt gattatcaat ttaccttcag cttattacag gaagatgatc 3240

gccaccatac tgccataaac tttatagcaa acccagaaca gtcgaacaaa aatctggata 3300

tatcaattaa tgcatcaaac aactttaatc tcaacattac gtggtctgtc ggttcaacag 3360

ctggaacaat atctggggaa gagacttcta tagtttccaa gaataatata aaggaataca 3420

gagatagttt ttcctatgaa aaatttaact ttagaagcaa tcctaacatt acgttctatg 3480

tgtacgtcag caacttttcc tggcctatta aaatacagat tgcattctca caacacaata 3540

caatcatgga ccttgtgcag ttttttgtca ccttcttcag ttgtttccta tccttattgc 3600

tggtggctgc tgtggtatgg aagatcaaac aaacttgttg ggcttctcga cggagagagc 3660

aacttcttcg agaacgacag cagatggcca gccgtccctt tgcttctgtt gatgtagctc 3720

tggaagtggg agctgaacaa acagagtttc tgcgagggcc attagagggg gcacccaagc 3780

caattgccat tgaaccatgt gctgggaaca gagctgctgt tctgactgtg tttctttgtc 3840

taccacgagg atcatcaggt gcccctcccc ctgggcagtc aggccttgca attgccagtg 3900

ccctaataga tatttcacaa cagaaagctt cagatagtaa agataagact tctggagtcc 3960

ggaatcgaaa acacctttca acacgtcaag gaacttgtgt ctgagaaatg gaaaccgctc 4020

ctgtatattc tgtactgttt tacttcgggc ttctgttaaa gctgttctat ggccttggat 4080

tttatggagg cagatctctg tatcatccag agcctgagta cagtttcctt ccaaatggac 4140

aatgacccag gtggccaaag aatgttcatg agtttttataa aagtattgat ggtcacaggt 4200

gataaagtca gtttttacca ctatcttagg cttattatag ctaacattaa attactctgg 4260

aaaaagatgt atattgtttc ttaatgaaga tgaaaaatat gtaattcata taaatcaact 4320

gtttatatcc caagacttta aaggaatgag ctaagtttgt aaatatctcc taaaaacaat 4380

caagtaattt tattagcttc ttttggaccc tctaaatatt gacttctctc atgaaaaaat 4440

aaattgatga aactaatgat tac   4463

<210> 640

<211> 3904

<212> DNA

<213> Homo sapiens

<400> 640

aattttcttt ctaacagtca ggcccttctt ctgctggtct gctggagttt tctgggggtc 60

cactccatac cctgtttgca tgggtatcac cagcagaggc tgcagaacag caaagattgc 120

tgcctcctcc tacttctgga agctgtgtcc cagaggggca cctgccagat gctagccaga 180

gctctcctgt atgaagtgtc tgtcgacccc tgttgggaga tgtctcccca tcaggaggca 240

tgggggtcag ggacccactt gtggaagcag tctgtccctt agcggagctc cagtgctgtg 300

ctaggagatc tgctgctctc ttcagagctg gcaggtggga atgtttaagt ctgctgaagc 360

tgcgctcaca gctgcccctt cccccaggtg ctctgtcccc aggagatggg agttttatct 420

ataagcccct gactagggct actggctttc tttcagagat gccctgccca gagaggagga 480

atctagagag gcagtctggc ttcagtggct ttgcagcgct gcagtgggct ccactcagac 540

tgaacttcct ggcagctttg tttacactgt gaggggaaaa ctgcctactc aagcctcagt 600

aatggcagat acctctcccc caaccaagct tgagcatccc aggtctactt cagactgctg 660

tgctggaagt aagaatttca atccagtgga tcttagcttt ctgggctcca tgggggtggg 720

atctactgat caagaccact tggctccctg gtttcagccc cctttccagg ggagtgaatg 780

gttctgtctc tctggcattc cagacaactc tggggtacga aaaaaactcc tacagctagc 840

tcagtgtctg cccaaatggc cactcagttt tgtgcttgaa atccagggcc cttgtggtgt 900

aggcacccaa gggatctcct tgtctgtgga ttgcgaagac catgggaaaa gcgtagtatc 960

tggaccggag tgcacccccca ctcacggcat ggtccctcat ggcttccctt ggctagggga 1020

gggagttccc caaccccttg cacttcccag gtgaggcaat gccccaccct gcttctgctt 1080

●

gccctccgtg ggctgcaccc actgtctaac cagtcccagt gagatgaacc gagtacctca 1140

gttggaaatg cagaaatcac ccactttctg tgttggtctt gctgggagct gcagacagct 1200

gttcctattc ggccatcttg cctgggaatc tgtaattata ttttattgca tattcttcct 1260

aggctgggtg tgtgtgtgtg aaagagagag agaaacagaa acagagacaa ggagacagag 1320

acagtgaaac agaaacagag tcatcttcca ggttctactt attaagcaat atcccatgaa 1380

gtcgctgaaa agtgttatat tctcctaata cctagtgttt gcaaatctgg cagctgtcac 1440

tgatgattta aacaagattg ggtgacttat ttatgtacac acacatccac aatcaaactt 1500

caacagtcga gtgtaccctt ttctaaataa tcacgttgct aaaatgtgcc acatggccca 1560

tttctttaaa caataaatgg taaattatta ttttggggag tgaaagctaa aagaaataat 1620

●

atgtctaata cgatgtggca ttttctctat acagtacagt tttagcattg aaaaggacct 1680

cagcaattcc atttgccccg ttttcagatg aggagattga ggctggtagt tacagtggtt 1740

ttgcttcatg tcccatccca ctggggctgc tatgcaagct ctcagtctag tcttctttcc 1800

tctgcacttg gtggccatca gctgtaacaa gtcctgacta gacaagggct ttgttgttga 1860

ctacaattca atgccttttt tgcctgcgtt tgtttggacc ctgctaatca aggctacagg 1920

gcagctgcag aaagacacct gctattggct tacctgctcc tcgccttccc tctgcttggg 1980

tctgagcatc agaaagccac cttccagtgg gtctttgcct agcttttgtc ttgtctttgc 2040

tttttattca tctttgcttt tgtcttctca gggcaaatag aaaatcctag acctcagatc 2100

actgttcttt gcttcccaaa agacagaaca gctcagtcct ggctgccacc ttctttcttt 2160

actcttggtt taaatgtaat cccacatgcc ctagacaagc ctcctgatga tttttcatca 2220

●

aacatgaaaa tagcttactt ttaactgctg ggtgtcagtc tcttctaaaa attttgttcc 2280

taaggaattg attttgcaaa tcagtgctaa agtcactttt taactgcctc acatactatc 2340

atttctttga caattctttt taaaggggat tgctcttttc tccttctggt ttctcaaatc 2400

tacttttaac ttcaaatagc aggcatgcaa tgtagtttta taagataata tactaggacc 2460

atctatcaga tatgaaacca agcataatca ttgcaattat ttctactgta ttcagataat 2520

gataatacaa ataagagtac gacatacgta aatgttgatt agctttctgg ttccttcatc 2580

aaaacttgcg ttgtgttgtg cagccttttc tttgcattgt ccaggggttt tgttattaca 2640

aaccataata tttaacccat ttcttctact aatatctttt aatatttatg ctattatata 2700

gctttttatt tttgacatgt atctaaacca gaaaaaaata ttccttgtac atgatatttt 2760

taggcaaaac ataatgtctg gagcaccaag tgaaataact gtggagaatg gaatgttgga 2820

```
caatttgtgt ggcatgctta gcttaatttg tttctatggc acaagcaaag ctcattaatt   2880
ccatttatta ttttaagcca cttgtttggt gttatggatt ttaagaatca gttggtgtta   2940
gaatttttaa taacacagag aaagccattg aatatggaac tcaaattatc taaggtttac   3000
ccagaagtca aaatcacctg gccctctgta aatttctctt tgtgttccta ggcccacaaa   3060
gtctttggtc tgaagactca gagcttaaat tgcattggtc ctgttaatct ttgtcaaaaa   3120
ggaagtttgg gcggcagttt cagggtagtg ttgagaagat aactcctggt cccattttat   3180
tctttcctca tttgttcagt gctcatggcc atctacaacc ttccttgatt ctattctgcc   3240
taagcctctt atttccacat ctataagtat agtgctacat aataattaca acctttaaga   3300
aaatggagag ttttcattaa agggcccctg caaatctatg atgctagatg acagattcta   3360
ccagaaggcc agagtattaa tagcacccgt gataactgta ataagaatat gtctcgtttt   3420
cttttaaaga catagatatt ccattttaat cctgtataac tcgaagaaaa tttgggtgtt   3480
aacactttga aataccttta cctcctttgg gggaaatcca aactgaaagg aattaatatc   3540
cacatcagtt cctaaagcaa aatgcctgac acagactaac aaagctcttt ctcatcctgt   3600
ggtaggaact taggagtgat aactcacatt gagaacttgt gatctgaaag cactaaggaa   3660
tttctgccat tgcaggtagg aaaaaaaaaa gacaaaaatg gtattctcag gtgagcttac   3720
ctttcaaatt tttctgagac ttcctaaatg tgacaagaac tctgctgtgt ggcaacctta   3780
tgtatccaca acagaactaa ggaccggaaa aaaaaaaaa aagatctcta tcccaataga   3840
ttttataaaa tccatactct aaaactcctg agttttacat gtaccctaaa acttaaagta   3900
tagt                                                                 3904
```

<210> 641

<211> 5196

<212> DNA

<213> Homo sapiens

<400> 641

```
aaccaggatt gcccccgaca ggtcactcag ctctatgtgc cagcatccag acatgtgtgg     60
aggttccggc ggatgggggag gataggcccg ctgcagtcca ccctggacgg tgagttctct    120
```

aggacacagg gttactgagg tatgaattac atgctgtcaa attcactcct ttaatctaca 180

gatctgttat ttttcataaa cttatacagc catgtcactc ccagcaggag ctaccatgta 240

gaaaagtttc atcacccaca aaattgcctc tagctccatt gcggccacct cttcagcagc 300

cacccatttc tgttttgtcc tgtcactttg ccttttgcaa aaggcctcca aagggaacca 360

tgctgtgtag tctgctcctg gctccttttg gtcagcacgc tgcatttgag ggtgctgtgt 420

gggttgattg ttccctctgt tgctcagcag tattccagtg tggggatgca ccacagtttg 480

tgaatccatt cattggttga aagacatttg gttatttttt ctgtctctgg gaatacgagt 540

acagctgcta taaacatcta tgtacaggtt tttctgtgaa catacatttt gtttgacatg 600

gagtaagttt cactgggagt aagaatcctg agacatttgg caagtttatg tttaacttga 660

tgagaagctg cagaactgtg ttccagggtg gctgcacggc tttgcattca gaccagcaat 720

gaatgagagc ctctgttgtt cccagtcctc atcagcactt acagttgtca tttaaaaaaa 780

aaaattctat gggccgggcg tggtggctct cgcctgtagt ccccagcact ttgggaggcc 840

gaggtgggcg gatcatcagg tcgggagttc aagaccagcc tgaccaacat agtgaaaccc 900

cgtctctact aaaaatacaa aaaactggct gagcgtagtg gcgggcgcct gtggtctcag 960

ctgcttggga ggctgaggca ggagaatcgc ttgaacccag gaggtggagg ttgcagtgaa 1020

ccaagatcac gccactgcac tccagcctgg gtgacagtat aagactgtct aaaaaaaaaa 1080

aatttggcca ttgtaaaagg tgggaaatgg tatcttcttg tggttttaat ttgtgtctac 1140

cagccgacta atgatattca gcatcttttt catgaatttg tttttttgtt gtgttttctt 1200

ggttgttttt tgttttttttg gagacagggt ctcactgtgt gctcaggctg gagtgcagag 1260

gcgcagtcac ggctcactgc agccttgact tcctgggctt cagcgatctt cctgccgtag 1320

cttccaaagt agttgtgacc acaggcgtgt gccaccacgc ctggccagtt ttttaatttt 1380

tttgtagaga tggaatctcc atgtgttgcc caggctggcc tttaactcct gggctcaagg 1440

gatcttccca ccttggcctc ccaaagtgct acgattacag gtgtgagcca ctgcacactg 1500

cctgtgaaca tgttttttag ttattgaatt ttgagagtta taaagctatt ctggatatag 1560

tttatcagat atgtgatttg caaatatttt gtcccaatct gtggcttgtc tttttctttt 1620

cttagcagtg tctttcaagg aggagaagtt ttaaattttg atagaatccc atttaccatt 1680

tttttcttta atgaaattgt gcttttgata tgatgtctaa gataccttca cctaacactt 1740

tactttttt ttttctttct ttcttttttg aggcagggtc tcggtgtgtc accaggctgg 1800

agtgcagtgg tgcaatcaca gctcactgca gccttgaact ctgcagtctc aggcagttct 1860

cccacctcgg cctcctgagt agctgggact ataggcgcgt gccaccatgc ccagctaatt 1920

tttaaaaaaa ttttcttcgt agaggcaggg tctctctgtg atgctcagtt tctcaaactc 1980

ctgagctcaa gggatgctct cgcctcagcc tgggattaca ggcataagct gccatcccca 2040

gctccttgaa atgagtttta agaggccaag ttacgattta ttgttggaaa ggaatgggat 2100

atgtgtttat tcatgaaata ctgcctgggg cctactgtgt atacagcctt ctcccaggca 2160

ccatctcatg cacacacgcc tggtctggga ggaactttgt tgccatagta ggagggaaag 2220

ggcacgaagg tggtcggggg tggccagggc accgcccact gctggatctg gctgcattcg 2280

ggcctcaccg ccagtgctag ggctagctgt gcacttgaga cgtgctagac agctggagtg 2340

gaagtgtagt ccttgattag gacatcttta atattcgatc aagttatgtg ttcggggagc 2400

tgctgtgctg atcctgcact gtgcatggct catgggtctg cctgaggcgg ggatgtgttc 2460

atggaactgg atttagataa atgagttaat caggatgatt tcaagaatct tcaccttaag 2520

aattgtcagt gggaatgcag gggaaagtac aagtgaacta attaaggttt taaaatgtgt 2580

tttagtgggt ttggagtccc cgccgctgtc tgtgtctgag gaaagacagc ttgctgtcct 2640

gacagagttg ccttttgtgg ttccatttga ggaacgagta aagatctttc agaggttgat 2700

ttatgcagat aagcaagaag ttcaaggaga tggtccattt ctggatggaa ttaatgtcac 2760

aataagaaga aattacattt atgaagatgc ttatgacaaa ctttctccag aaaatgagcc 2820

tgatttgaaa aagcggatcc gtgtgcactt gctcaatgcc catggcctgg atgaagctgg 2880

cattgatggt ggtggtattt tcagagagtt tttaaatgaa ctactgaagt caggatttaa 2940

ccccaaccag gggttcttta agactactaa tgaagggctt ctgtacccca acccggctgc 3000

tcagatgctt gtgggagatt cttttgccag acattactac ttcctaggca gaatgcttgg 3060

aaaggctctc tatgagaaca tgctggtgga gctgcccttt gcaggcttct ttctttccaa 3120

gttgcttgga accagtgccg acgtggacat tcaccacctc gcctccctag accctgaggt 3180

gtataagaat ttgctctttc tgaagagcta cgaagacgat gtggaggagc ttgggctgaa 3240

cttcactgtg gtgaacaatg acctgggaga ggcgcaggta gttgaactaa aattcggtgg 3300

gaaagacatc cctgtcacca gcgccaaccg gattgcgtac atccacttgg tggcagacta 3360

caggctgaac aggcagatcc gccagcactg cctggctttc cgccagggcc ttgccaatgt 3420

cgtcagcctc gagtggctcc gaatgtttga tcagcaagaa attcaggtat taatttctgg 3480

tgcacaagtt cccataagcc tagaggacct aaaatccttt acaaactatt caggaggcta 3540

ttctgcagac catcctgtta ttaaggtctt ctggagagtt gtggaagggt tcactgatga 3600

```
agaaaagcgc aaactgctga agtttgtaac aagctgctct cgaccccctc tcttggggtt  3660

taaggagttg tatcccgcat tttgtattca caacggaggc tccgaccttg agcggctccc  3720

cacagccagc acctgcatga acctgctgaa gctccccgag ttctatgacg agacactttt  3780

gcgaagtaaa cttctctatg cgattgaatg tgccgctggc tttgagctga gctgaagctg  3840

atgctggggt cagaccccta cagagaacca gtgcttcctt cgtcagcagc gcctccccag  3900

acccacgagg atactcacac tgcacgcctg aggctctcct aagctccttc tttcattctg  3960

ccattcctcc ctcccttcct tttttaaatg atttttatta cggtgtggtc acttatttag  4020

atggacattg cttttcaaat aacttaaaat aacacgttat gtgccatgtg gctactttag  4080

taatattgcc aagaagagca cagttttttac actagtggca tctcagtgaa attaaccaaa  4140

gatgaagctt tggctttgct ggtgagatca gagccctcct gagcaggcag cgccactcca  4200

gggttcagac agggctgcac aggcggcaga gatacagggt ctgagggctg agacgccatg  4260

gggccgctgc tgcttatgtg gttggattgt ttacaagcct cattattaaa actgaaggca  4320

ttttttttttt ctgctgcctt tcccaaagtg gttaggtttg gaaaagagat gatgatggta  4380

atattttatt tgtgctttttt aagccatttc cccaaatggg actagcatgc ttgttttcag  4440

tataccgtgg cctgcctcat gatggtttgg agatactgtc tgtggatgtg aggtgggggac  4500

ttcattcatt gtcctatttc tatctccact ttgtgcctgg agagctttca ggggaggtgg  4560

aggaggaggg tctgccaagc tactgcaaca tctgtcaccc actatateca gttacttggg  4620

ggaggacaga cactgtggtg tcattaaagt tgtttgaacc aaagtggcgg ctgcatcttt  4680

gtcccgatgc tagccgtgcc ggtctcccat catccgctcg ccctcctttc ccctgggctg  4740

cgcccacttg tcttcctgga tatttggggg tgactcgcca tgcttggcac cctctgcttc  4800

ctggtgctgc tctgactcga agacgggaca gtccctggtg cacatccagg gaagaggagc  4860

gtcggtagtt cttgcagtag gcactttatc aggacctgac ctgttgctgg gtgattttag  4920

tctctacaaa cagaaagcgt ttcaaagcgt cagctgtggg agcagagtga cccttttgctg  4980

atgctggggg gaggggatct aaatcctcat ttatctcttc tatgtctagt attttactgt  5040

cactggaggc tctgtgggct gtcatagtta attgaccata attagcaata tacttttaaa  5100

gtgggaaagc tgaatgacac ttttaagaca atgaacatta tcaaaacaaa atgtataatt  5160

tcttaatttg aataataaat taagcgttta aatgct                            5196
```

●

<210> 642

<211> 4171

<212> DNA

<213> Homo sapiens

<400> 642

tttcaggcca	tgcagtctct	gttgcagcta	ctcaactctg	cctaaaatga	aaacagtcat	60
agacaataat	tgaaagaaag	agcatcatgg	ctgtgtttca	ataaaactct	agtttgcaaa	120
aacaggcatc	tttctggatt	tggcctgcag	gctgtagttt	gccaatccct	ggattaaggc	180
ctggtttcca	aacactgatc	actgaacaga	actggtcagt	aacttttaac	aattcatagg	240
gaaataagaa	agttagaagc	aaggtagtga	gttttatata	aaactaaatt	tattctcttt	300
aattggtcat	cctgactttc	agtattcttt	gctggtcttt	tgctgcaaaa	tacctttttc	360
tttatgaaac	gaaagtatag	taggcagcag	ttttcaggtt	tgcctttgct	tattaatagc	420
tctactgaca	actcagtccg	cagatttcct	tttggaaatg	ttataagcct	aggaaattta	480
agcacctggg	aaccaccagc	gcaggaggat	acaaagtgtg	aactacagcc	tctcactctc	540
atgttctgtc	tctcttcttc	cctacctccc	gggcctgctg	acagcggtgg	ttggggctgg	600
gattgggggc	tctgctgtgg	cccattttct	ccagcagcac	tttggacctc	gggtgcagat	660
cgacgtgtac	tagaagggaa	ccgtgggtgg	ccgcttggcc	accatctcag	tcaacaagca	720
gcactatgag	agcggggctg	cctccttcca	ctccctgagc	ctgcacatgc	aggacttcgt	780
caagctgctg	ggtgagtggt	cagtcctggg	gctccagtgc	ccagcgccct	ggggctggtg	840
acagcactgg	gcccttctca	gacttcccag	accatcaagg	ccagaaggtc	atgtggccca	900
atctcatttt	acagatggag	caacagaaac	aagagagggg	aaggaacttg	cctgaggtta	960
cacagtgagt	tagttgcaga	gccgggatta	gaactcaggt	ttgactccta	ggccagtttc	1020
tttccctttc	aatttgctgc	ctctaaataa	tcgtgattat	atcaccttcc	acatgctggt	1080
gcttgccagg	caccttctgg	gtggtatgta	ggcattacct	cagctcccct	ctaccaacct	1140
gcaagatgag	tgttatatct	cctcttaagg	caactgaggc	tcagaaaatg	tatagattta	1200
agctaaagcc	attacagcga	gaggtgggat	tcaaacccag	cagcatctgt	ccaatacacg	1260
ttctgtttga	tgcagaaact	ctgcttctca	gaagtgatgc	tacaggtggt	cttacagatg	1320
tgcaaagtag	catagatacc	aagttattca	ctacagcatt	gtttgtaata	gcaaaaggct	1380

```
gaaagtatcc tagctgccta tccactagga cctggggtta aacaaattat tgtataacta 1440

cacaataggc tgttcagcag tcagaatggg gaagtcttta tgcccagata cagggcaatc 1500

tccaagatac agtgtattgt taaagtggag agcagtgtgt gtagtatgtg ggggtgggga 1560

aggaacaagt catagcagct ctgtctgtgt ttaggagtcc actgctctgt caagttgcag 1620

agtgcaggat ggctgtaagg agctaggata acttccaagt gatctcagtg cccaaggcca 1680

ccatctccaa acaagcccag tggctgtcac cccctggaca ttctgggata aaatctgaat 1740

ttccctcact tgtggatcct cctggggaaa aaaaatgtaa aatgttacat tattttcatt 1800

ttcatttttt tattgacttg gtagtccaaa cattttccca gtgcatctgt ttactgttta 1860

ttaacaagca gcacaaatga acaaaccata gcatttgtgt ttcctttaat ggaccagtcc 1920

atttgcatca agagggcccc aagtcttgga ggggacctga ggggctcctc tttgtctctg 1980

cagggctgag gcaccggcgc gaggtggtgg gcaggagcgc catcttcggc ggggagcact 2040

tcatgctgga ggagactgac tggtacctgc tgaacctctt ccgcctctgg tggcactatg 2100

gcatcagctt cctgaggctg cagatgtggg tggaggaggt catggagaag ttcatgagga 2160

tctataagta ccaggcccac ggctatgcct tctcgggtgt ggaggagctg ctctactcac 2220

tgggggagtc cacctttgtt aacatgaccc agcactctgt ggctgagtcc ctgctgcagg 2280

tgggcgtcac gcagcgcttt attgatgatg tcgtttctgc tgtcctgcgg gccagctatg 2340

gccagtcagc agcgatgccc gcctttgcag gagccatgtc actagccggg gcccaaggca 2400

gcctgtggtc tgtggaagga ggcaataagc tggtttgttc cggtttgctg aagctcacca 2460

aggccaatgt gatccatgcc acagtgacct ctgtgaccct gcacagcaca gaggggaaag 2520

ccctgtacca ggtggcgtat gagaatgagg taggcaacag ctctgacttc tatgacatcg 2580

tggtcatcgc cacccccctg cacctggaca acagcagcag caacttaacc tttgcaggct 2640

tccacccgcc cattgatgac gtgcagggct ctttccagcc caccgtcgtc tccttggtcc 2700

acggctacct caactcgtcc tacttcggtt tcccagaccc taagcttttc ccctttgcca 2760

acatccttac cacagatttc cccagcttct tctgcactct ggacaacatc tgccctgtca 2820

acatctctgc cagcttccgg cgaaagcagc cccaggaggc agctgtttgg cgagtccagt 2880

ccccccaagcc cctctttcgg acccagctaa agaccctgtt ccgttcctat tactcagtgc 2940

agacagctga gtggcaggcc catcccctct atggctcccg ccccacgctc ccgaggtttg 3000

tactccatga ccagctcttc tacctcaatg ccctggagtg ggcggccagc tccgtggagg 3060

tgatggccgt ggctgccaag aatgtggcct tgctggctta caaccgctgg taccaggacc 3120
```

```
tagacaagat tgatcaaaaa gatttgatgc acaaggtcaa gactgaactg tgagggctct  3180
agggagagcc tgggaacttt catcccccac tgaagatgga tcatcccaca gcagcccagg  3240
actgaataag ccatgctcgc ccaccaggct tctttctgac ccctcatgta tcaagcatct  3300
ccaggtgacc tactgtctgc ctatattaag ggtccacacg gcggctgctg cttttttta  3360
aggggggaaag taagaaaaga gaaggaaatc caagccagta tatttgtttt atttattttt  3420
tttaagaaga aaaaagttca tcttcacaag gtgcttcaga cttggtttct tagctagaaa  3480
ccagaagact acgggaggga atataaggca gagaactatg agtcttattt tattactgtt  3540
tttcactacc tactcccaca atggacaatc aattgaggca acctacaaga aaacatttac  3600
aaccagatgg ttacaaataa agtagaaggg aagatcagaa aacctaagaa atgatcatag  3660
ctcctggtta ctgtggactt gatagatttg aggtacctag ttcagaactc cctagtcacc  3720
atctccaagc ctgtcaacat cactgcatat tggaggagat gactgtggta ggacccaagg  3780
aagagatgtg tgcctgaata gtcgtcacca tatctccaag cttcctggca accagtggga  3840
aaagaaacat gcgaggctgt aggaagaggg aagctcttcc ttggcaccta gaggaattag  3900
ccattctctt ccttatgcaa agattgagga atgcaacaat ataagaaga gaagtcccca  3960
gatggtagag agcagtcata tcttacccct agatgttcat cccagcagaa gaaagaagaa  4020
ggtgttgggg taggattctt cagaggttag cctggtactt tctcatcaga cactagcttg  4080
aagtaagagg agaattatgc ttttctttgc tttttctaca aacccttaaa aatcacttgt  4140
tttaaaaaga aagtaaaagc cctttтcatt c                                 4171
```

<210> 643

<211> 3975

<212> DNA

<213> Homo sapiens

<400> 643

```
agaactctgc gctactgccc acgcatctca caaagtctac tacgccgcgc gttctcggtt   60
tcaacgcacc tccaggattc agggcttcct aagctgcaat tcagcagggc tcccttgctt  120
gttctcactc tgtgcccccg gcaacgaccc cgcgcgccta cactcccgtg ccgcctcagc  180
```

```
tactagtccg caacttctag ccccaaaacg ctggagctca gaagccagct caggcaagac    240

taactcggtg ttgctcctcc cggcgctgac ttcgaggccc ggctatggac ggcgagagcg    300

aggtggattt ttctagcaac agcataaccc ctttgtggcg gaggcggtcg attcctcagc    360

cccaccagct tctgggccgg agcaagccga ggccccagtc ctaccagagc cccaacgggt    420

tactaattac ggatttcccg gtggaggacg gagggacgct ctccgcagcg cagattcccg    480

cccaggtgcc caccgcctcg gacagcagga cggtacatag gagccccctg cttctgggcg    540

cccagcggag agcggtggcc aatggtggga cggcatcccc ggagtacagg ctgcctctc    600

ctcgacttcg acggcccaag tcacccaagc tccccaaagc ggtgcctggc ggctccccga    660

aatccccagc aaatggcgcg gtgaccttgc ctgcgccgcc ccgccgccg gttctgcgcc    720

ccccgcggac tcctaacgcg cccgcccct gcaccccga ggaggacctt actgggttga    780

ctgccagccc ggtgccttcg cccactgcaa atggccttgc cgctaataac gactctcctg    840

ggtcaggttc gcagtccggc cggaaggcaa aggaccccga acgggggctc tttcctgggc    900

cccagaaaag ttcttcggaa caaaaactcc ccctccaaag ctgccctcc caggagaacg    960

agctcctcga gaatccttcc gtggttttga gtacaaacag ccccgccgcc ctcaaagtgg   1020

ggaagcagca gatcattccg aagagtctgg cctcggaaat taaaataagt aaatccaaca   1080

atcaaaatgt ggagccccac aagagactcc tcaaggtgcg cagcatggtg gagggcctag   1140

gaggacccct gggtcacgca ggggaggaga gtgaggtcga taacgacgtg gatagcccag   1200

ggtctctgcg gagaggcttg cggtccacgt cttatcgcag ggcagtggtc agtggctttg   1260

attttgacag tcctaccagc tcgaagaaga agaacagaat gtcccagcct gttctgaaag   1320

tggtgatgga agacaaggag aagttttcca gtctgggaag gataaaaaaa aaaatgctga   1380

aaggacaagg aacatttgat ggggaagaaa atgctgtcct gtatcaaaac tacaaggaaa   1440

aggcccttga cattgattct gatgaagagt cagagcccaa agaacagaag tcagatgaaa   1500

aaattgtgat tcaccataag ccattgagat ccacatggag ccaactctct gcggtgaaaa   1560

gaaagggatt atctcagaca gtaagccagg aggaaagaaa gagacaagag gctatctttg   1620

aagtcatatc ctctgaacat tcatatttac tcagcttgga gatcatgata cgaatgttta   1680

aaaattctaa agaactgagt gatacaatga ctaaaaccga gaggcaccat cttttctcca   1740

atattacaga tgtctgtgag gcaagcaaaa agttctttat agagttggaa gcaagacatc   1800

agaataatat cttcatagat gacataagtg acattgtgga aaaacacaca gcatccacat   1860

ttgacccata tgtgaaatac tgcacaaatg aagtctacca acaacgaaca ctacaaaaat   1920
```

```
tgttagctac caatccatcc tttaaggaag tattgtcaag gattgagtcc catgaagact  1980

gtaggaactt acccatgatc tcttttctca ttctccccat gcagagggtg acccgccttc  2040

ccctgctgat ggatactatc tgtcaaaaaa cacctaagga ctctccgaag tatgaagtct  2100

gcaaaagagc cttgaaggaa gttagcaagt tggttcgact atgcaatgag ggcgcccgga  2160

agatggaaag gactgagatg atgtacacaa ttaactccca gctggaattt aaaattaagc  2220

cttttccttt agtctcctct tcccggtggt tggtaaaaag aggtgaattg acagcctatg  2280

ttgaagacac tgtgcttttc tcaagaagga catccaaaca gcaagtctac ttctttctct  2340

ttaacgatgt gctcattatc accaagaaga agagtgaaga aagttacaac gtcaatgatt  2400

attccttaag agatcagcta ttggtggaat cttgtgacaa tgaagagctt aattcttctc  2460

cagggaagaa cagctccaca atgctctatt caagacagag ctctgccagt cacctcttta  2520

ctctgacagt ccttagtaac cacgcgaatg agaaagtgga gatgctacta ggagctgaga  2580

cgcagagcga gcgagcccgc tcgataactg ccctgggaca cagcagcggg aagccgcctg  2640

cagaccgaac ctcactgacc caggtggaaa tcgttaggtc atttactgct aagcagccag  2700

atgaactctc cctgcaggtg gctgacgtcg tcctcatcta tcaacgtgtc agcgatggct  2760

ggtatgaggg ggaacgacta cgagatggag aaagaggctg gtttcctatg gaatgtgcca  2820

aggagataac atgtcaagct acaattgata agaatgtgga gagaatggga cgcttgctag  2880

gactggagac caacgtgtag tctctcagat ggtctttttgt tactgcaaga tttgcacgac  2940

acttaccggg ctggttggtt ctgggctagt tttattgtta attttgtcac agcctattta  3000

attaaaagaa cgaaaacact tgcctttaag cttgccaggt tgttccgctc tctcatgaga  3060

agagcttgga tacagtgagt ttgcacagct cagtttttac ctaaccacac acttgcagac  3120

ctcctgaggt acacagaata gctgagcagt tcacttcagg gatcaggtca tctctgctcc  3180

tcctagtttc accatgttct ggcaataaaa aacacatatt atatcctggt tttctctatc  3240

cttgcattac taaggtgact gtctctcttt atacatcctt gtatggttct cccagtatta  3300

gcaagattgt atatctgtaa agaatgtcca gttttgtaaa tatttccctg cctttttttt  3360

tcttttttta catctgattt taatgcttcg ttaacttcaa aaggaactgg tagagttcag  3420

aaggtgagct gttgtttttc taaacctctt cccaggaagg ggacattgac acttgaattt  3480

ttgtcacctt tttcctcatt agaaggaaag tagaaagcct tactgtagga tttttaaaaa  3540

aaaatccatc tcaccccata ttggtcttaa ataagtatag actaattaac ctaagctacc  3600

tttaacaacg tagaatttag atgggttcat atatgtgaga aaaacctgaa tataggacag  3660
```

gggtcctact tttttcccca cctctgtcgc ccaggctaga gtatagtggt gtgatcttgg   3720

cccactgcaa cctctgcttc ctaggttcaa gtgattctcc tgcctcagcc tcccaagtag   3780

ctgggattgt aagagtatgc caccacgccc agctactttt tgtattttta gtagagacag   3840

ggtttcatca tgttggccag gatggtctct taactcctgc cctcaagtga tccaccagag   3900

aggagatcct cggcctcccc aagtgctggg attataggca tgagccaccg tgcccagcct   3960

actttctaat taatt   3975

<210> 644

<211> 4071

<212> DNA

<213> Homo sapiens

<400> 644

aataacctcc tatgccttgt ccaacaccac ccctgcatag tcacacaaat ccacacctct   60

tgcctcctgc cctcacatgt cccccaacct cagggtcaca gatgtctggg agctcccccc   120

cagtacactc acatgtggct gtacacacac agtcatatgc agccaactat agagcacacc   180

ctcctccaca cacttgtact tgcacatcca cacacacaca tgaagaagca cgtgcattcc   240

cactaccagg tctgtacggg caacatgtgt cttacacata tgtgtgcatc cctaaaggag   300

tcccttgtgc tctgggttgg tcattgtggt caaagccagc tgtctggcac ccagcagccc   360

tcatttcagg gaaagccctg tcccatatcc tgctcttaac ttgcctcttc ggtctgtacc   420

agcctggaac tcttgggttc tcttgtgtcc taggagagcc tgaggactgg ggctgtaagt   480

agtgaagttt gattctggca gtaccagtta agaggagcag gggaggtagg agtctgtctc   540

cctctaccct tgaacagaag ctggcaaaat ctgtggtggc cccatcctgc ggagcaggcc   600

gtccacggct gatagtgcag agagctcagg ccgaagctgg tggctgcagt ccctggaatg   660

gatgccactg acctcagct gagtctatct cagcgggtgc tgggggcagg ggagggaagg   720

agcagtggga gtagagactc gtccctggca ttcctccctt gccttgtgcc cctatcaggt   780

tcccacccct ccctgggccc caagcagctg tccttgggcc tgccttcatc tcctgcttgc   840

tgctgtcacc ctcactaggg ccacactttc cccagggggcc tgagaaatct cagctcctgg   900

```
tcccttccac ctaataccac cttgtcttag cccttgtggt gtcatgctgg gctggctggg    960

gctcgaggca tccatgatgg gtggcacctc catgccttcc caggcccagg agctgggagg   1020

ggcagcaatg gccctgatct ggctctctct attttcaggg ctcagcggag tcctacacca   1080

gccgtccatc agactctgat gtatctctgg aggaggaccg ggaagcctta aggaaggaag   1140

cagagcgcca ggcattagcg cagctcgaga aggccaagac caagccagtg gcatttgctg   1200

cgcggacaaa tgttggctac aatccgtctc caggggatga ggtgcctgtg cagggagtgg   1260

ccatcacctt cgagcccaaa gacttcctgc acatcaagga gaaatacaat aatgactggt   1320

ggatcgggcg gctggtgaag gagggctgtg aggttggctt cattcccagc cccgtcaaac   1380

tggacagcct tcgcctgctg caggaacaga agctgcgcca gaaccgcctc ggctccagca   1440

aatcaggcga taactccagt tccagtctgg gagatgtggt gactggcacc cgccgcccca   1500

caccccctgc cagtgccaaa cagaagcaga agtcgacaga gcatgtgccc ccctatgacg   1560

tggtgccttc catgaggccc atcatcctgg tgggaccgtc gctcaagggc tacgaggtta   1620

cagacatgat gcagaaagct ttatttgact tcttgaagca tcggtttgat ggcaggatct   1680

ccatcactcg tgtgacggca gatatttccc tggctaagcg ctcagttctc aacaacccca   1740

gcaaacacat catcattgag cgctccaaca cacgctccag cctggttgag gtgcagagtg   1800

aaatcgagcg aatcttcgag ctggcccgga cccttcagtt ggtcgctctg gatgctgaca   1860

ccatcaatca cccagcccag ctgtccaaga cctcgctggc ccccatcatt gtttacatca   1920

agatcacctc tcccaaggta cttcaaaggc tcatcaagtc ccgaggaaag tctcagtcca   1980

aacacctcaa tgtccaaata gcggcctcgg aaaagctggc acagtgcccc cctgaaatgc   2040

ttgacatcat cctggatgag aaccaattgg aggatgcctg cgagcatctg gcggagtact   2100

tggaagccta ttggaaggcc acacacccgc ccagcagcac gccacccaat ccgctgctga   2160

accgcaccat ggctaccgca gccctggctg ccagccctgc ccctgtctcc aacctccagg   2220

gaccctacct tgcttccggg gaccagccac tggaacgggc caccggggag cacgccagca   2280

tgcacgagta cccaggggag ctgggccagc ccccaggcct ttaccccagc agccacccac   2340

caggccgggc aggcacgcta cgggcactgt cccgccaaga cacttttgat gccgacaccc   2400

ccggcagccg aaactctgcc tacacggagc tgggagactc atgtgtggac atggagactg   2460

accccctcaga ggggccaggg cttggagacc ctgcaggggg cggcacgccc ccagcccgac   2520

agggatcctg ggaggacgag gaagaagact atgaggaaga gctgaccgac aaccggaacc   2580

ggggccggaa taaggcccgc tactgcgctg agggtggggg tccagttttg gggcgcaaca   2640
```

agaatgagct ggagggctgg ggacgaggcg tctacattcg ctgagaggca ggggccacac 2700

ggcgggagga agggctctga gcccagggga ggggagggag cgaggggctc acacctgaca 2760

tgtattcgcc tccaggggggc gctgtctccc tcctttcaga tgcctttgct caaagcttgg 2820

ggtttctttg gtgttaccat cccagctccc gggaggccct taagccccag ctgtcggttt 2880

ttacctgcct gttgtggatg gatgggggat acccaccttt ctgaagtgtc ccctttctcc 2940

catcttaagg ggctctcctc cctcaccctc ctagagaaaa ggtgcacttc cttaactctt 3000

tctactcggg gccctaagtg acggtcctaa gtgggatggc tctccttctc ccaagctgca 3060

gtactgggga agggctgggc gcttttcctg gaaagggagg ccacagattc tttcccatgg 3120

gggctctctt ccccagaccc cagatccaag gtccctcacc ctgcctgccc cttcctccca 3180

gcttcctggc agcatcgtct ggtcggtgaa agccatagca tggacacccc atggggagct 3240

tgtcttgggg agggttctgg gtggaagctg gcaggcatac agcaccctct accctccgtg 3300

gccatggcaa cgtccagggc ccagaaccct gaggagtgag cggccgagac gctgctcccc 3360

accccccacc tccatgcctc agcctttgcc taccccagga atgagcttgg cctccaacat 3420

cccttgcctg ctgccattag tagaggggggc ccctctgcat ctgagccccc catccctgtg 3480

ccacctgggt gtggagccca tggaacactc tggtccgcct cattttaaac caaaaaactg 3540

ctccttcacc ctcaccctga ggccccaggg gagaggaccc gtgggatggt gcccaggggt 3600

tgccttggga cctcggatct cctctggggg gcttggctgc tgctgttgct gctctgtatt 3660

tgcctctcgt gattctgttt gttacccatg ttcacttccc ccaggagagg ccttggtacc 3720

ccctctcccc tggggcatcc ctttgccttg gcatccctgt agcccagcaa ccctgcccct 3780

ccccagcatc ccagctgggc cagagagagc cgagtgtgcc aacaaggact ggggcctgcc 3840

cggctgcccg cctcagggat gggcacctca tgcctgtctc gccacctcct gtgccaatgt 3900

cccaccctcc acctgggggt ggggtgcagc ttccacttac tgattagaag acaccactgc 3960

cctcccttcc cccctccctg tctggtgtcc tgtgccccca tctgtctgtc tatatttgtc 4020

tgtactcccc taggagaagt attttgccat atataaaacc actgtcctgt c 4071

<210> 645

<211> 3963

<212> DNA

<213> Homo sapiens

<400> 645

agcagctagc agggagatgc tggggggatag acagggctgc tggggactgt tgtacaggct   60

gtgcactgct caagggtatc cagagcccag ctttgtatct accaggaaga aggggctccc   120

ctccctccc ttcctcttcc ctccctctc ctttcctctc ctctcctttc ctttcctttt   180

tttttttttc gagatggagt cttgctttgt cgccctggct ggagtgcaat ggcatgatct   240

cggctcactg caacctctgc ctcctcggtt caagcaattc tcctgcctca gcctcctgag   300

tagctggaat tacaggtgca caccaccacg cctggctaat tttttgtat ttttagtaga   360

gacggggttt caccatgttg gtcaggctgg tcttgaactc ctgacctcgt gatccgccca   420

cctcggcctc ccaaagtgtt gggattacag gcgtgagcca ccatgcctag cctttttttt   480

tccccccctg gaaaaggtgt agccataggc gctgactgag gtcctgggaa caagtctcca   540

gagggcagtg gcactcaaac ccacgtacct ggctggcctc ccagaatgtg agctgagccc   600

aagcatgctg tgaagccaag atgcagaggt tgatgaaggc acagcccatg gagatgtgga   660

agtagaaggg gaagagtttg ctctgcacta gtccgaaggt gaagatcccg aaagccccga   720

ggaaaccta aatctcatcc tgaggacacc gatcccacca aagccccgag gaaacgccaa   780

atctcgtccc gaggacaccg atcccaccgt taggaaccgg gacctcaatc cgcagcaccc   840

ggattccgag aacagaggcg tcggggccaa atgggctgaa tctggtacct cactcccacg   900

cccccgggtg gacagcgacc ctcctcggcc gcgtcccctc gtgggtttcc cccaaccaat   960

aattcgtccc gcctcccagc tgagcccgaa gccaatcggg tcgtagatct gcacctttct   1020

atcccgccct cctgggtatt gactaatcgt agaaaccccc ctgggatccc gcccctcca   1080

cgggcttttta tccaattacg ccgcggctac taagcgcagc tgaagcgtga aggcgccaat   1140

gaggccttcg gctactccgg caggggcgga actaaaatgc cggccacacc cctctctgtg   1200

actcagtctc tgagcgtttt aatacgatgg tgtccccgcg ggatcaaact tcagcgtcac   1260

agctgaggac tggcttcgtg gtccctgatg ggagagcatg aacaggtggt atgtggtagg   1320

tggggttctg gagcctggcg ggtgtagatt tcacaaccca ggggggcggag ccaggatgat   1380

gaccccgccc cctccctaaa taattctccc gggagggaca cggaagcagc aaccgggatg   1440

ggacggggag agaggaggca ctactgggga cctaagctgg ttctcaaatg cctctccttt   1500

tcccctccaa gcctcccagg cttcctatgg tccctaagtc ccggggttctc agcgtgacat   1560

```
tccagagcaa acacagctcc ccattactct ataccaggca ctggcatgga ttaatttatc   1620

taatcacaac atcccagtaa ggtgactatt atgacatctc gtttttatag ttggggacac   1680

tgaggcatgg agaggttcag taacgcgacc agtattacac agctggaagg gacagagcta   1740

ggatttgaac ccaggccatc tagctggaga gtttccctgc ttaaccgtca tactctgctg   1800

tccctggaag tgaggacctc cctgaggcag tgactctcgg aggggcagct taggacattt   1860

caggcagaag aaaaacgtgt acatcacagg gtgggtgtga agatccagtg aatgcttagg   1920

ggatgcccgg cactcaatta ggtgctcaga aaataggagc ctaaaaaagg attaaggaag   1980

attttactga agatatgctg aatagttttt gtttgtctgt ttgtgtttga gacggagttt   2040

cgctctcgtt gcccgggctg gagcacagtg gcatgatatc ggctcactgc aacctccgcc   2100

tctgaggttc aagcgactct cctgcctcac ccttccaagt agctgagatt acaggcatgc   2160

gccaccacgc ctggctaatt ttgtattttt agtagagatg gggtttctcc atgttggcca   2220

ggctggtctc gaactcctga cctcaggtga tccacctgcc ttggcctccc aaagtgctag   2280

gattacaggt gttagccacc gtgcccagcc tgagtagttc tgaagagcgt gtaggagtct   2340

tccaggtcga ctgaatcagg cagagggcct ggcaagggtg acagagagaa aggtctagag   2400

gatttggggg aagaggctga gtgtgactca gggcaaggtg cctttcacct agaagtttct   2460

ccaggcagac ctgccccaga tatctccatc tgtgccatat gtggctatac tggaggggga   2520

ggggagttga atgtgagacc cagagctcag ctgtttcctg tttccagcct cttctagcac   2580

gggtctgggc cccaattcag ctaacattta ttgaacagat atgccctgcc tctcctgctc   2640

acactctatg gctggcattc acctgtgggg ccaggtcgaa actcctggct tggccgtcaa   2700

tgccttactg gagctgctct gctaacctcc tgctgcttcc tctcggacct cgattcagcc   2760

atcatgaatt taccagcata gagcatgtga ttccacacct ccaagctttt gcacatgctg   2820

ctccctgcca ggaaaggcct tcctttaagc caatgtcaag gtcccttttt tctttggact   2880

cttctgaggc ctgatttttt ttctttgggg ccttctgggt ccttctcact gcccagccca   2940

aaccttgggg ctgggataat ctttttgtt gttgtttttt attttggag actgagtctc   3000

actctgttgc tgaggctgga gtgcagtggt gcaatctcgg ctcactgcca cctccgcctc   3060

ccgggttcaa gtgattctcc tgcctcagcc tcccgagtag ctgggattac aggcgcccac   3120

caccatgccc agctagtttt tgtattttta gtagagacgg ggttacacca tattggccac   3180

gctggtctcg aactcctgac ctcaagtgat cctcccgcct tggcctccca aagtgctagg   3240

attacaggcg tgagccacca ttgctggccg cgtctggcct tgggatcatc ttttatccag   3300
```

```
ctttggctcc taccataact gagaagcctt gagtttaggg ctgaggcctc tctggcatgt  3360

cagggagggt ctgggggcac tggggacatg gggacttatc tcaaagcagc ccctgcttcc  3420

ctactcacag cgaccctctt ttggccggcc taccccggga ccctgactac tctgtgtcct  3480

gcctctactc acctccctca ccctccagca tgtgtttgcc tgctaacatg aagtgtgaca  3540

agtactgggg ttagttaggg ggctcccata gggctgggga cactgggagg ggctgggaat  3600

gtgaggagtg ccctgcactg tccctcaagg aagccctcac ccctaggctc ttcctcggac  3660

aaggctctgg agcgtacagc tcactggtcc aggactccag agccagagac cttgggatgc  3720

cctgcttctg gggacacagt gaggactgca gactgcaggc cagggtgggg ctcagggcct  3780

tcgccacatg aggctgcccc ctcccccagt ccagacctgc agaagcagtg ctgtaatgac  3840

caggacctct cccagccacc tttcagcaag agcggccgct ccttcccacc cgcttgagca  3900

gccgggactg ctctccctga agacccctcc agagagaaaa taaactagcc cagaccctcc  3960

tct                                                                3963
```

<210> 646

<211> 3688

<212> DNA

<213> Homo sapiens

<400> 646

```
atgactctct agcaaaatcc taataataat tatactttgg tcagtatgcc atagattcag   60

ctacttaaga gtagcacttt attgcatttt aaataaaact taatggcact acttactgtg  120

acgcctcaaa gccaaagtgg ttgtggaagc tgagtgccaa aatggatata aagaccgagg  180

gaaaagattt tctgtgaaaa tattttctaa aaagtttata ggctgttcct tctgacctgt  240

ttatgggaca aatagggac tgaagaagtg cgttaaatgt ttggatgtat ggtagtatca  300

ggcaatggtg gcagtgcttc atagattgac ttaaagctgt gatgttttta caacatcatt  360

atcctgtggt aattctgcca caaaaggaat taaatctcag aactacatat gataactgtg  420

gcaactggtc attggtgtgc tagagttgcc ttgtgccagc ttatgaggca tcttgcaagt  480

cagttgttaa actgctggaa gtttaaagta ggccatgaag gatgtatgta caccacagaa  540
```

```
attaagaagc actacaaatc agggctcatt ttctttccta gaaagtcagt ttactggtac    600

atcactgttt gtaagttatt ttttattctg tgcttcttgt tgagagggat gagggtagga    660

tttgtcagtc ttctagatgg agttgttaga atagcaaaat cagcactatg tccatggtat    720

atcttatcta tattctcaga aaatttgctc tctttgatgc ttaaatattt aatgagatgt    780

gagtcagagt agagtgaact aacaacttag gcagaatatt tgtaggacat gactttcaaa    840

tctttacctg ttacagtatc tacagagaat gctgtcataa actgacaagt cttaggctga    900

atttcttacc agaaacttac caaatggagc ctgtgaccct aaataactgt tttagtgtgt    960

gtacacttag gttgctgggt ggggcatgct gcttaaccag ggagcctaag tgtgtcagat   1020

ttcaacttgg atgttgtagt ggagaaaagg tatctgtttt aatatgtatt gtcaatagtg   1080

tctgatcagg ctcaaatgta ggatcttgtc cagttagtga ataagagtaa attaatgtcc   1140

agtgacctct ggcagcccta tcctaatgtc ttattagaag cccacaagaa ttggagagga   1200

tttttcatgg gtctcgtgtt tctgaatgtc ttgtgaatga tgtgctgact gctctttgtt   1260

ccagacaatc tttttaaggg tttttttttt ttccaatagt gaacagcctg gaaagataga   1320

aatagtgctc gctagagcag agggcaagca tgtttacttt ccattataaa aaagacttgc   1380

ttccctaaat tcaaggttcc tctcttgtaa cacaacccac tgtgtgtgta ggtgtcatgt   1440

ggccctctta gcatcacctg ggccctgtca taaaaatgct gatactactg ttattactgt   1500

aaactgtcct ttatctcaga cctaggagct tgatgcatcc atgaaactgt gccaggctaa   1560

cttgttagcc tgcaagtagg gtaatatctc ggatgctgta agttcttaat atcaccttcc   1620

ccatacccca tggtgcagga acgttggaat ttccctaggc tttaagaatg aaaaagcaaa   1680

tcctaagtcc ctttcagtcc tgaaggatct atgttgtgag gtagcatgat acctcattct   1740

cacttaggta tgccagatgt atcctgagaa attttagggc catttcagag agacagctga   1800

ggactagatt ctcatcatgc cttcatttca ccaaatagca ttacaataaa taactctgtt   1860

actgtgagag aacttatttt gtatgagttc agtccttttg catttattta tttatttatt   1920

ttttaatggt atcttggtaa atgttctttg tgcactagac aagaatgtgt attttgctgc   1980

tgctgtcgga tgatttgata aatgtcaatt aggtaaagtt ggttcataat gttaagtgtt   2040

ctatttgctt actaattttc tgcctacttg ttttatcaat gtgagagggg tgttgaaatt   2100

tccaactaca agtatggatt ggtctatttc ttatgtaaat tctataattt tgcatcatat   2160

tattttaaac ttcattttta gatgcagaaa catttaggat tgttacgtac tcttggtgaa   2220

ctgacccctt tatcattatg aagtgacctt ctttagctct agtaatatca ttgccctaaa   2280
```

atctattttg ttattaatat agcaaccccca gctttcttct taatttgtgt tagcatgtta　2340

gcatcgtata tgtttttcta tcctttatt tttaatgtat ttgtgtcttt atatttacaa　2400

ggtttttttt ttagaaatca tagttggatc ttggtttta aaaatctaat ctgaccacct　2460

ctgctttag ttagtgtatt tagtccattt acatttattg tgattattaa gatggttgtg　2520

tttatcttct ttattggctt attagctata gttcttttaa ttagaggttg ctctaggttt　2580

tataatatat gactttaaat tattagtcta tcctcaaata atataccatt ttatgtatcc　2640

ttgtatctcc ttttccctac ctttgtgcca ttgttgccgt aactttagt tctacatgtt　2700

ataaactcca taatacatta ttatttttgc actaaaaatt atattatctt ttaaagggat　2760

tttaaaaata gaagtccttt tatgttcacc aatgtatttg ccatttctac tcttcttcat　2820

ctcttcatgt aaatctaaat ttccacctaa tatcatttga ctaagggact tcttttttaac　2880

atttcttatt gtctgttggt catcttttgt gtctgaaaaa aacctttgtc tttatttttg　2940

aaagttattt ttgctgggtg taagattcta ggttttgggt ttttttttctt gctttcagta　3000

ttttaaagat gtcattccat tgtcctctga cttatgtagt ttctgacaag aagtctgcca　3060

tctttcttat atttattcct ctgtatatgt ttcctccaca catacagagc tactttacc　3120

attttttctt tatcactggt ttgcagtaat ttgattaaaa tattccttgg tgtggttccc　3180

tcccctcca cttttcttct gtttcttgga tctgacaatg taaagttttc ctcaaatttg　3240

ggaaaaaaaa ttgtttaaga datggggtct tgctgtgttg cctaggctgg actcgaactc　3300

ctgggttcaa gtgatccctc cacctcctga gtagctggga ttacaggcac acaccactgt　3360

gcacagctca aatctgggaa atttttggcc attatttctt caaacattta tctgtctccc　3420

cttctttctc ctttgcttga gactccagtt acatctgtgt gagacttcta gatgttgtcc　3480

cctaattcac tgttctgttt tttttgtttg tttgttttttc tttgtctttt tctctctgcg　3540

attcattttg gttaataaaa agtaattaaa agtatctcag ctcaactgaa gaacaacaaa　3600

aaaaatttaa cgagaaaaaa ggattaaagt aattggaagc agtatataga aactgtttca　3660

ttaagtaata aagtttgaaa caatgatt　　　　　　　　　　　　　　　　　3688

<210> 647

<211> 4034

<212> DNA

<213> Homo sapiens

<400> 647

```
aggcgtaacc ctgatgtcaa gatttctttg tgtggctttt aaccaatcct agaggccatt   60
ctgaggaggg gtgctctaag cacgtgaaac cttgcctcag tgtggcttca taataagtat  120
gcagccccca aagatgatga cgttgaagag ccactcatct gaatgtattt tatttattaa  180
caaatacatg agtttgtgca atagtatcat ctagagctta gtttctggag taagactgcc  240
ttgaccaaat accagttcta ccatttatta gctgtggaat cttgagcagg ttattgagcc  300
tctctgagcc ttactttcct cttctgtaaa atgggcatgg tggtacttac ctcatagtat  360
tatgaggatt gaatgagaac caacgataag tgcttaatga gaattggggt gagtattatt  420
agctgtcaca gacctgtccg attttccttg ggtcacattg ggaaggtgtc gaataaccca  480
ggagaggaga ctgtgccatg tgatacaccc atgttcggtg aaggctgccc tcgttggtgg  540
ctgatgcaaa gagtcatgtc gatggactaa attcattact cctcagctgg gcattttggc  600
ctctagttaa cataagctaa ggactggcta ccaggttgct tatcgcccaa gggaaaaacc  660
cagggaggag gcaaattgaa agcctgaccc ttggcagtgg tcctgggtga agaatttgct  720
gaggactcca gctaaggctc accactcagc atctcctgat tgcagggagg caagatgaaa  780
caatttccct cactttcttc tttataattt agtctccaga gataagttta attcatgtct  840
gtgtctcagg tggaggcctt ccccttgagt gagatggtgg tggtggcggg tggtggacat  900
cactgtgctt tgccatcttc cttcaccctg tggccccagg gcctagccca gggctggggg  960
acagggcaga caccattccc agacatgtgt gctgaccaca ctcactttag gaagggaaac 1020
aaaccattca tcagctcagc cacaggggct cgaccaagga gcctccatta gctggtgtcc 1080
tgggaatgac agctgtgggc atgtgatcct gccgccttct tgctcacggc cctccagcga 1140
tgccagggcc ttggatcaag tccagagtcc ttggaataac tctcagtcct ttatgccctg 1200
gaccctgcct gcccttccaa agtcggctct cagatcctct ctccttgctg ccccctccag 1260
caaaaccaaa ccccttcagg attcctgact gcttctccat ctttgaggtt gctgttccct 1320
ctgcctgaaa tgctttttctt ctccctttcc tctccaccct ggctgtctct cagctgccca 1380
gggttgtctg cgttgacctc acagccccgg gttctttcct atcacggcag cccaatcgtg 1440
gactgtctcc ccagctggag tgaggggagg ggcagggact gtttcgccca cattacaagc 1500
tgtgtcctgc acagagcccg gtaaatgttg agtaaatgtt gcttctgggg atccctggac 1560
```

```
tggcttactt ccttcaggga gctctgccca gtgcttagtg gggactgtat atgagacagg    1620

cacgagggtc gggcgggcag tcagacccct tttcaagtga ctgatcgtcg ttatctgttg    1680

atgaggtgtg ggctggagtt cttgctgaaa cgtgcccgtg aaatgcatct cccttccttg    1740

gcacactggg gcctcctgag accctggctt ttgtgttcct gtcttcccca ctgcgtctca    1800

gcttccttac tcgtggctga ggcctgaagc aaagggggtg ctttgtacgg agctgcacag    1860

gcccagggag gtgtctccag tcgtcagggg cccttctgct ggccaggcca cagctccaga    1920

ctgccctctt gggagcgggc aaggcagaca cacttgggca ggggtggcag ggaaagtgca    1980

cgtatcgttc ttggaacagg taaatgtgtg caaatgccca tcctccagtg ggaggtggag    2040

cccatggagg cccatgcaga gtccatgagg ggtggcttct ttcccacaga ctgtatgggc    2100

accaaatgtt tcacattgtc ctaagtgagg gcccagcaag aaaacctccg gggcttatcc    2160

cacctccccg acaggccgga ggcgaggagg tggctgcccg gggccttggc ttttggtgca    2220

gcattgagtg caacatcgga tccctaaggg acagagacca ggggctcaat gcatccaggg    2280

gacacctggg aactggtggg tttgggttgg gggccttctg tttgagatgg aggtgtgatg    2340

aggtgttttc agtctcatgg ggtctctctg gcaggtctat aacttgaccc aggagttctt    2400

ccggcacgat aaaccagtca atgctgaaag tcaaaatagc gtgggggtgt cacccgaga    2460

ggaggtgcgt aaccgcatca ggaatgaccc tgacgaccca gaggctacca agcgcctgaa    2520

gctcgccatg atccagcagt acctgaaggt atcttgagga agacggattc tggggggcgtc    2580

tgggtctgag gagggctacg ctgctcctac ccctgcccaa ccccggcggt cacctggctt    2640

ctccttgggt cttcccgcag gtggagagct gtgagagcag ctcacacagc atggacgagg    2700

tgtccctgag cgccttcggg gagtggaccg agatccccgg cgctcaccac atcatcccct    2760

cgggcttcat gcgggttgtg gagctgctgg cggagggcat ccctgcccac gtcatccagc    2820

tagggaaacc tgtccgctgc attcactggg accaggcctc agcccgcccc agaggccctg    2880

agattgagcc ccggggtgag ggcgaccaca tcacgacac tggggagggt ggccagggtg    2940

gagaggagcc ccgggggggc aggtgggatg aggatgagca gtggtcggtg gtggtggagt    3000

gcgaggactg tgagctgatc ccggcggacc atgtgattgt gaccgtgtcg ctaggtgtgc    3060

taaagaggca gtacaccagt ttcttccggc caggcctgcc cacagagaag gtggctgcca    3120

tccaccgcct gggcattggc accaccgaca agatctttct ggaattcgag gagcccttct    3180

ggggccctga gtgcaacagc ctacagtttg tgtgggagga cgaagcagag agccacaccc    3240

tcacctaccc acctgagctc tggtaccgca agatctgcgg ctttgatgtc ctctacccgc    3300
```

```
ctgagcgcta cggccatgtg ctgagcggct ggatctgcgg ggaggaggcc ctcgtcatgg   3360

agaagtgtga tgacgaggca gtggccgaga tctgcacgga gatgctgcgt cagttcacag   3420

ggaaccccaa cattccaaaa cctcggcgaa tcttgcgctc ggcctggggc agcaaccctt   3480

acttccgcgg ctcctattca tacacgcagg tgggctccag cggggcggat gtggagaagc   3540

tggccaagcc cctgccgtac acagagagct caaagacagc gcccatgcag gtgctgtttt   3600

ccggtgaggc cacccaccgc aagtactatt ccaccaccca cggtgctctg ctgtccggcc   3660

agcgtgaggc tgcccgcctc attgagatgt accgagacct cttccagcag gggacctgag   3720

ggctgtcctc gctgctgaga agagccacta actcgtgacc tccagcctgc cccttgctgc   3780

cgtgtgctcc tgccttcctg atcctctgta gaaaggattt ttatcttctg tagagctagc   3840

cgccctgact gccttcagac ctggccctgt agcttttctt tttctccagg ctgggccgtg   3900

agcaggtggg ccgttgagtt acctctgtgc tggatcccgt gcccccactt gcctaccctc   3960

tgtcctgcct tgttattgta agtgccttca atactttgca ttttgggata ataaaaaagg   4020

ctccctcccc tgcc                                                      4034
```

<210> 648

<211> 4722

<212> DNA

<213> Homo sapiens

<400> 648

```
ttttctattc ttttactttc aacctatttt tgtctttttaa tctaaaggct gcctcttata    60

gataccacat ggttgtatta atttttaaaa cttactatgc caaattcttc cttcattgca   120

gtgttttatt catttgcctt cactacattt ttttccagat ccttaaggtc agccagaggt   180

gagagactag ggacttctca agttttтcct gggcgtgtgg acagccctga atatgcctgg   240

ggccttctag attctcaggg atatтttgga gcaaatcaaa ctccctatgg acctcttatt   300

ccttggtttt tcctttтaag tttтttggtg ggcttcttgt tagcatcagc tgataatgct   360

tctcaaacag ctgtaatgtt aaacagttgt tgctcatggg ttttgacaaa tgacctgcag   420

atagtgctgt tcacagaaaa tgaactctga gtcaggtcaa atcaagacaa gctctgagaa   480
```

tgtagctttt caaggagcta ctagacaggt tgaatagaga ttattttctg ggggcaggtc　540

tttaagggag tctcagtcca ttttgtccct gccagtggct tctgggttgg tggggtttgc　600

cgctctctta gttgtgaggc tactggtttt caaggctttt gtagggctgg ggtgaacagg　660

ttaggattag ggcagctgtg aacttcacaa agctcactgt gttaacagag attcagcagt　720

aggtcttgat caaacactcc ttggattatt gcagtacttt aactaatttc cataggagtg　780

tacttattaa atcttgtcaa aaaactgatg atgcttagaa ctatgttggg cactatgagg　840

gatacacaaa aatatgatac cctcttgtct tcccagacct cataatacta gtgtgacaca　900

ttagcctgga ggaacttcta aggaataaag ggaagcctct ctgtctttgt ctgtgtgggg　960

gagggtgtt tgcagaacta actctctctt tctctggcct ttgtggtggg gacctttgac　1020

ttgttaatct ccagacgtgt tttatgtgat gcagggcact caacacaagc cagctgaagg　1080

cactgaatat tgaaatgctg cctggctatc gagatccta ttcctccagg cctctaacaa　1140

ggggtgaaat cggctgcttt ctcagccact actcagtctg gaaagaggta attgatcgag　1200

agctagagaa gactcttgta attgaagacg atgtgcgttt tgagcatcag tttaagaaga　1260

agctgatgaa gctgatggtt aacattgacc aggctcagct ggactgggaa ctgatttata　1320

ttggtaggaa gaggatgcaa gtaaaggagc cagagaaagc agtgcccaat gtggcaaacc　1380

tggtcgaagc cgactattcc tactggaccc tgggctacgt catctctctg gaaggagcac　1440

agaagctggt tggagccaat ccttttggga agatgctgcc agtggatgag tttctgccag　1500

tcatgtacaa caagcatccc gtagccgagt acaaggagta ttatgaatcc agggacctga　1560

aagccttctc tgcagaaccc ttgctcatct accctacgca ctacacaggc cagccggggt　1620

acctgagtga cacggagacc tccaccatct gggacaatga gacagtggcc accgactggg　1680

ataggacaca tgcctggaag tcccggaagc aaagccgcat ctacagcaat gccaagaaca　1740

cagaggccct gccaccgcca acctccctgg acactgtgcc ttcaagggat gagctatgaa　1800

ggctccctgg gagtgtggcc cacatcagtt caacatcctc tggttttct aaagggctat　1860

tcatctgttt gctccagttt tctgttttgt tttgttctta gtggtcacag tcatctaacc　1920

aaagtgatct agtgtgatag atcgaaatta acatatttttt gaccatggaa ggaaataagg　1980

aaattcaacc caaatttccc aagacggctg aaagacaggt tttctggaaa ctgttaagat　2040

aaactgtaat ccagacacct aattcttcag ttcactactc atgtgatact gattcccaca　2100

ttaaggttga acaacatggc tcagagtctt gttcaagaga aagtgatcac cgagctgtca　2160

catcagcaaa tatgtagtca aggcagccag gccaactaga ccacacttat tggtctagtt　2220

```
tgtccgtttt atatgacatt gaaaacttgt gtgtgcaact tttgggggac aggaatcact  2280

taaaatcata tttatttggc tttttattta aaggattctg tcacaagtct tattgaaaag  2340

tagatttaaa aaaaaaaaaa aaatcttagt ccctgttatc cagtaggggt gggtatttgg  2400

gtctgactga gacttggcct gtgaccatca tggcagttgg agctctcata tagaggtgac  2460

cagtttgcca tgtggatata atttagtaga tatttgacag tttgtgtagg tatttgaggg  2520

aaaaaactca atgtttggct tttttattat ggccactcga gtcaggatgc tctatttata  2580

aagataaatg taatatataa agggtgagga ctggctgtgc atcctgccct gtcccgggtt  2640

tgcgcgctgc tacagagctt cacgctctcc gctccacccc ttagcctggg aacccaccgc  2700

aggtgtgagt tctgtgagtc actgctaaga gacagagcac attttcaggc cagcaactat  2760

ccttgccagg gttttttcat tatattttga attatttatt ttacaaaatg ggcgaagata  2820

ttgtctttag gataaggcag agaaacagat gttgcagact tccacggcac ccggggggagt  2880

ggtgggtgtg gacacattgg ttcggcaatc tgattctcct gaatttccca gccaggctct  2940

tgtggggagg cctgtggatg gggggatttg aactatttgg aaacaaatga ttctctatct  3000

caggtgagaa acctggtcag aaacaaaggg ctggtcacct gatttaggcc agcaaccagg  3060

gaagctctta gaatcccagg cggacaccct ttctcaaaag atatccccta agagtccttt  3120

ctgctttctt cacagattga ttttatgtaa aatgcagagt tggactacac gatttcttcc  3180

cactccacaa tctgtcatcc tagtatagat catggtggtt tccctcaagt ttatgttctc  3240

atgccctcaa tctgtaaatt tttgtctcca gaaaaaccct cccaggcatc ccataccagc  3300

accgttcctc atcactgtcc atgtaccatg cagccgtatg gggggccgtg cacaccccaa  3360

accctgagct tcacacttaa actcatgggg agggcccttc agagcagagt ccacaggcgg  3420

gtggtgctac atacacaagc ttagtgtaca agtgtaagat acactttaag ccagacacct  3480

aattcttcag ttcactgccc atgtgatact gattgccaca ttaaggttga acagcatggc  3540

tcagagtcta gagaaagtga tcaccaagct gtctcatcac caaataggta gtcaaggcag  3600

cctcacctcc ccaggtgagg ggcgggtccc cactttagga caagaggcag cttgccttcc  3660

accagacgcc agcctcggcc ttcctccccg actcactgtg ggtacccttc tacactgacc  3720

agcaagctag gccgctggag gaaagggaac tcacccaact ctaaattgtg ccgcttagac  3780

ttagctgtca gtgtgacttc ctttcccacc caccccagaa aaacagaaa gagcatctgg  3840

ggagcgagtg aaaattcctt aggtgattcc taagatttcc ttgggtatct ggttttttgtt  3900

ttcatatttg agtgtgtgca tgtgtgcatg actttaatga cttttttaat ggggtgggag  3960
```

```
gtggctgggg tgctgggggtt gaaggaagtt tgggttgatt tttgtggtgt tttgtttaat   4020

agagaatttt ttttttcctg ttcccctgtc agctggtctg acagatttaa gaactctcat   4080

tcttaaaaga ctttggactt aaattctagc attttagact aggactgttc tactgtgaag   4140

aaagttctgt ctcctttagc ccggtttgtt tctccctgct caggtctaga atcccaagca   4200

gtgttcttct ggtgagcact gtgagccgca gatgtgactt ttttttttaaa gtcatctctt   4260

cagcaatcca gaggttcctt gacctcatta tttgtcctat ctctcccctta tagtcctaag  4320

ccaagacatt tgacctttga catttgacct ttgcagtgtc atgtgagggc gtcagtatag   4380

aggcctttgc atctgggcct ggcacccgct ctctgcctct ggaggctaaa ccctgtctgg   4440

atttctcttg ggatctaacg tgggatcttc tggacagaca accgtgacat cagcagtgct   4500

ggtgctgctg tgtgtggact gaacacctgc actttgcaga ggacacgctg catgggcccc   4560

gcttgcggtt cattcaggcc tgctgcagga gctctgagaa caagaaagag tggacacccg   4620

ttcccctgca tcatctgtct tgcgtgctat ttcagagtgg ggaagtgata aactatttgc   4680

cttctggagc tctttgtgaa aaattaaaaa aaaacttagc tc                       4722
```

<210> 649

<211> 4383

<212> DNA

<213> Homo sapiens

<400> 649

```
aaaggagctg gctcgcagtc cctgtctcgc gggggggtgcc tcccccaact gcgatggggg   60

tcctaagagc cggggggggga agaggggctg gctctcagtc cccgcctcgc gggaggtgcc   120

tcccccccact gcgatggggg tcccaagagc cagggaggga agaggggctg gctctcagtc   180

cccgcctcgc gggaggtgcc tccacccctt ccgatggggg tcccaagacc gagggagggg   240

agaggggctg gctctcagtc ccctcctccc gggggtacct cctccgcctg cgatgggggt   300

cccaagagac agggggggaa gaggggctgg ctctcagtcc acgcctcgtg ggggatgcct   360

cctcccccccg cgattggggt cccaacagcc agcgggggaa gaggggctgg ttctcagtcc   420

ccgcctcgcg ggggatgcct ccccgtgctg cgatgggagt cctaaaagcc agggggtgaa   480
```

aaggggctgg ctctcagtcc ccacctcgcg aggggtgcct ccccccccctg cgataggtgt　540

cctaatagcc agggggggaa gaggggctgg ctctcagtcc ctgcctcgcg ggtggtcctt　600

cacccgctg cgatggggt cctaagagca aggggggggaa gtggggctgg ctctctgtcc　660

ccgcctcgcc gggggtgcct cgcacccttg cgatggggt cctaagagcc agtaggggaa　720

gaggagctgg ctctcagtca cctcagcatg gggggccttt ctgttctggt tttgcccaag　780

agtaagctta tttgcatctg gttctagcaa gggaattgct gcgaaggccc tcaaacaggg　840

gggccatcct ttcgaatccc tatctagttg tttagagatg taggccaccg gcctcagcca　900

aggccccaca gtttgggtta aaagtccagc tgccatcttt tctctctgac gcatacaatg　960

gaaaaggctt tgtgagatcg ggtagcccct cggctggggc tttcagaagt ttttccttta　1020

agtcatgaaa gacttgctgt tgttggaatc cccattccaa aagttcccgg tccccgcccc　1080

cattgtgacc tcatacaaag gcttggctaa tactgcaaag tttgggattc ccagtctaca　1140

aaaccccaca gctcctagga attctctcac caccttgtg cctttaggct tcggtagatt　1200

gcaaatgacc tgctttcttt cggatcccgg gctgctttcg gacacctgtc gaatagtaaa　1260

tcccaagtaa ggtacctgcg gtcgtcggca gatctgaatt ttcttcttgg cacctaata　1320

cccacagtcc tccagagacc gagaggttga tgtcactccc aatatcggag gaagtataca　1380

cccccgtgtg agatggtcct taataatatt ccacggcgga gggggtgata tgactacata　1440

catggcagaa agtggaaacc tcccagggat attgttccca cgatcctgga gggaagaaga　1500

tgatgttact ttcaatatga cagaaggtgg atgaagtggt ggactgcccc tccacacctg　1560

tggacacgcc cccactgata ttccttctaa ttgcagcgtg ggagaggagg atatgacacg　1620

cgatatcgca gggagtagaa acacccctgt gatactgttc ttaatattca gggaggaaga　1680

ggatgatatt actcccaata cagacgggtg tacaccctct gtacaccgag ggtgtacacc　1740

tgtctgtgaa agagttcgta atctccagag ggggagatga tattactcac aatatggtaa　1800

agaggctgtg agtccacgga ggatcctcag agccagcggg ggaagagggg ctggctctca　1860

gtccccgcct cgcggggggtg actcccccca gtgcgatggg ggtcctaaga gccagtgggg　1920

gaagaggggc tggctctgag accccgcctc gcggggggtg cctccccgcc ctgtgatggg　1980

ggtccgaaga gccagaaggc ttagaggggc tggctctcag tccccgcctc gcggggggtg　2040

cctcctcccc ctgcgatggg ggtcgtaaga gccactgggg gaataggggc ttgctctcag　2100

tcaccgcctc gcggggggtg cctcctttcc tttctacata gacacagtga cggtctgatc　2160

tctctttctt ttccctacag atggacacgc ccccactgat attgtttta atgcagcgtg　2220

```
ggaggggagg atatgacacg cgatatcgca agtagtagaa acaccccttt gatagtgttc  2280

ttaatattca gggaggaaga agatgatgtt actcccaata cagacggatg tacaccctct  2340

gtacaccgag ggtgtacacc cgtctgtgaa ggagttcgta atctccagag gtggagatga  2400

tattactcac aatatggtaa acaggctgtg agtccatcgc ggatcctcag agccaggtgg  2460

ggaagagggg ctggctgtca gtcccctcct cgcggggggt gcctccccca ctgctatggg  2520

gatcccaaga gccagtgggg gaagaggtgc tggctctcag tctccgcctc gcgaggtgcc  2580

tccccaccct gcgatcgggg tccgaagagc caggggggaa gaggggctgg ctctcttcgt  2640

ggatgattct ttttccattc tcaggcagtt ttcttttttc tttctttctt tttttttttt  2700

tgagactgag tcttgctctg ttgcccatgc tttgctcgat ctcgggtgac tgcaaccact  2760

gcctcccagg ttcaagagat tctcctgcct cagcctcctg agtagctggg actagaggcg  2820

tgtgtcacca cacccagcta atttttgtat ttttagtaga gatggggttt caccatgttt  2880

gccaggatgg tctctatctc ctgcccttgt gatccaccca cctcagcctc ccaaagtgct  2940

gggattgcag gtgcgagcca ccgggtccag cctctcaggc gattttcata cctgcatact  3000

ctggtcacta ctctgttaaa cagtcaagga gggtaagtat tatcttcaga tttccagagc  3060

tctgtctctg tacagccctc tcctcctcaa tattctgccc tatgaattct agccacattg  3120

gccttcccag gctcacagtt ctgtcttctc aactcaggaa gatctctgag ttccatctgc  3180

attctttctt cctgtgctgt ggcctggaaa gttttctaag gtgttaggga ggtcaattgt  3240

ggggctagcc tcatttgttt ctcatctctt gaggatcact gccctttgat gcttgattcc  3300

agtgattgat tccctttgtt gcttgagggc catagtttca tatattttgt ccagtagttt  3360

tgttgtttta ggtcagaaag taattttggt ctctgttact ctatcttggc cagaagtgta  3420

agacctaagc atttacacat caaaatactg cacacataat tttagtttaa gctacttttt  3480

aaaaaatctc cttcattttc catttagcat tctatttagg gtattacatt ggttttttttg  3540

aaattctgtt attggcagtt tctattgcct atcaatccca tttaaagata gtgcataggg  3600

tattctaaaa tagctgttaa gcaaagagaa aattgggcct gatagggtga gaatcacagc  3660

tctaatacct agagtgacct tataatgtat tgtccaaagg agatattttt gacagtgaaa  3720

gagggtgttg ttagtaatta tatcaggacc atggcctaaa ccaggactat cccaggaagc  3780

ctgggacata tttgtacccc atctctattt aatgccttta tacaattctt tacttaattc  3840

taccagcctt tattgagtct gctttctttg tctagctgag tgccacgtgc tgacgtcact  3900

aagatcaata cagcaaactc tgaaagatgg acagagagac aggagatggt cctttataat  3960
```

出証特２００４－３０５９６６１

gcagtgtgat ctgtgctgca atagagatgg aagagtgttc tgatcggctg gaaaacaacg 4020

cacatgggaa gctgtacaga aatgagtggg gaaagttttg gaagctagaa gttcaaaacg 4080

aggtgttggc agcaccatgc tctctccgaa gatgctagga agaatctgct ccatgccttt 4140

ccattcgttt ctggggtttc ctgcaagccc tgacattcct tggcttgtag atgcatcacc 4200

ccagtttccg cccccatcat cacatggcct cctctctgtg tgtgcctctg cgttccctct 4260

attcttcttc taaggacacc gacaccagtc atagtggatt aagtgtccac tcctaaccaa 4320

ttacatctgc aacaacccta tttccaaata aagtcacatt ctaagattcc tagggagaac 4380

atg 4383

<210> 650

<211> 4027

<212> DNA

<213> Homo sapiens

<400> 650

tattgtgcct cccaaagatg tccctgtgga tctgcacttg aaggcattcg tgggttacag 60

aagcaggtga ccctttgcaa gtcacagttc atttcaggac agcacttaga ggagggcaag 120

atgtataaat tttccatatg cccagtggat tcttgggggc ctgagaaacc atttaatggt 180

tctgtctacc caaagtttct catgaccttt tatttcctca gtttgaaacc tgtaaaaaga 240

aaatggaaaa actgatatgt aagtttaaga tggttctttt tttttttttt tttttgaga 300

cagattctag ctttgtcacc caggctggag tacagtgggg caatctcagt tcactgcaac 360

ctctacctcc tgggttcaag caattcttct gcctcagcct cctgagtact gggaccacag 420

gtgcccacca ccacgcccag ctaatttttg tatttttagt agagacagga gttcaccatg 480

ttggccaggc tggtcttgaa ctcctgacct caggtgatcc acccgccttg gcttccgaaa 540

gtgctgggat tacaggcatg agccaccacg cctggctaag atcattattt tctgttttta 600

gtcaggtgat ctcataatca aaaaatgttt aattgataat ttgtcaattt gtagttttgg 660

ccactaaaac tacaagagtt aggatgcacc tttatattac agtcatacat aacctcagct 720

agtgaagaaa aactgctcta tttgtggaag ataagatact ttttacatcc cctttatgat 780

```
attttaaacc cttagtgcat gcaggtatat atgtagactc atgctgtctt taaatcccaa    840

acctaatata ttactgtagt actttaaccc tcaagtgttt tgggggttcc ttcttaagtg    900

aaacccttaa atatcaattg atgacccaga agtggcttta ttttctgggc cttgcatttt    960

gaaagaacat tctatacaaa acaattctct tgtgtttcat tgattggcca tagcacccag   1020

tttcatgtat ttgaatcgac aagacagctc cctcgattct ccatgtatgc gctgaccagc   1080

ctggaccctg ccagtgagcc aatcagttat gttaacttta ccattgcaga acgggcacag   1140

agggtgagta tctcgctttt ctctttcaat gcttttacac agtagaatcc tttagatgtt   1200

atttcataga aagggaaaat tacattaatg tgttatattg gtagcagtaa atatgatatg   1260

aaagaattct ctaacttggg ggtggcttgt aacctgtaat aaaaatattg ctaaaatacc   1320

ttctctcact ttgaaaaagc atctgagcaa tcctcagtta ttggtgaatt cttaccagtg   1380

tttaattcct ctctttccgt tatggtctta gtgtggttgt cctggtgtag tatttcaaga   1440

ggaacctgca gcaagatgaa aagagagtgg acttggagc taagaacgtt tttggcttta    1500

agtgctacgt taactcatta aattcttagt gatcttgggg aagtcccctc accagtgtga   1560

gcctcagttt tcttatctaa taagtaagga taatcttacc caccttattg cggggggcccg   1620

aggattacat gattggtgta acagtagcac cttgtacatt tgaaaggact aataccagtg   1680

gactttaacc ttggctgggc tttggaattc ttggtgggac tttttaatca tgtagattct   1740

caggcccctg cctggcctgt ggaaccacag actctatagg tgggcccttc cagaaggcct   1800

catgggtggt tctcatgtgg aacctgtgtt gcaagccact gcatggtgtt actgctatta   1860

acattaaaac ttatattttc cttattgtgt ggatatatct gtggtgtttg cccatgtata   1920

cttcatttta catttcttaa agaatagaat ggaatggttt taagcacgct acattgtcca   1980

ggttataccc acagaagagc tgttgtgtaa cagaatcagc atcatacctg aatcatttgt   2040

acattgcata taagactatg tctaagtaga agatgctatg aaatcatgtc tgctgtgggg   2100

ccaggcataa ttatgaatgt tacttaagag cataggtgag gtgagaaaag gaatgtgac    2160

tagtgtttta gtattttctt ggtgtgggat gaagtataat tcttttttttt ttttctcaac   2220

aaagcagtaa aactagaaag aaggagaact cttccctcaa gaatggctgt accttcatat   2280

ctagaggcac attaaaaaaa agaacgtctg taccttaaaa atggaggtca tttcattgtg   2340

ttcattttca aggttgttgt atggctcggt cagaactttc tgttaccaga agacactcac   2400

attcagaatg ctccatttca agtgtgtttc acatctttac ggaatggcgg ccacctgcat   2460

ataaaaataa aacttagtgg agagatcact ataaatactg atgatattga tttggctggt   2520
```

gatatcatcc agtcaatggc atcatttttt gctattgaag accttcaagt agaagcggat 2580

tttcctgtct attttgagga attacgaaag gtgctagtta aggtgaggga atgcggtaga 2640

tgcatttgtg agaatgtggt agtctaataa tatttgagga gattaatggt actacaaatg 2700

tacttatgtt atagtgatgt tttcaagaat ttttgcaatt cttgaagtaa aaattgaact 2760

agtattggag agtttactac ttaaggattt attttataaa aggaagtgtt tagctcctga 2820

gcaccatgct tgctttgttt ggtttaaagt gatgcattta aatattaaca ttttcctttg 2880

ttagctcttc atcttatttg tagtatctgc tttggtcttc ttcagtttgg gtctttccaa 2940

aaacccaaat tcaagataaa agagcaaaat aaagatgatt ctgattggcc ccaaagtata 3000

caatattccc actgcaaatc cctaaaatat taatatgtgt gttgtggggg ctcctggtgc 3060

taaagcatgg ggaagattca catggagtgt cgtgttgaaa ttggaggcag cacagatgag 3120

ttaacttgtt gagacagaga tgaaataacg ggaagtagct taattggtat aagcgaacag 3180

gggaaagaag ggggtctctg tatctggtaa atagtgtctt ttcatttgtc tgggttcaag 3240

aagtttgtga ggcctttttc attcctgagt gttcatggtc tccaggtgga tgaatatcat 3300

tcagtgcatc agaagctcag tgctgatatg gctgatcatt ctaatttgat ccgaagtttg 3360

ctggtcggag ctgaggatgc tcgtctgatg agggacatga aaacaatgaa gagtcgttat 3420

atggaactct atgaccttaa tagagacttg ctaaatggat ataaaattcg ctgtaacaat 3480

cacacagagc tgttgggaaa cctcaaagca gtaaatcaag caattcaaag agcaggtcgt 3540

ctgcgggttg gaaaaccaaa gaaccaggtg atcactgctt gtcgggatgc aattcgaagc 3600

aataacatca acacactgtt caaaatcatg cgagtgggga cagcttcttc ctaggtgagg 3660

aaaatacagg tcatgaagtt cctggcaaag attttctgtt aaaaacctat gctggtttgc 3720

tttggatcac accctggtga accccgggtg ctaagaatga aaataacctt ggtgagttgt 3780

acaaattaaa gacaaagaac tacatgtgaa gatagacttg ctttctattt ttaaatcagt 3840

agtagtactg ttgctgaata atactaggtt tttatggaat aggatgaatg cttttgaagt 3900

attagggctt cagagtccaa ttttgcttat ttatggtata taaatacata tttttttctt 3960

gaaattgcaa ttgagtttgt acttttcaaa tagattatct acttttcat taaaatgtaa 4020

agatgtt 4027

<210> 651

<211> 3690

<212> DNA

<213> Homo sapiens

<400> 651

```
ccccaatggc tcgggtctcc cccccagcgg caggggtctg ccccatggca ggggtctttc    60
cccacggcag gggtctcccc ccaatggcag gggtctcccc ccaatggctc gggtctcccc   120
cacatggctg ttgtcttccc ccatggctgg ggtctttcac cacagagtct agtgaccacc   180
ttgctccatc gcctccctgt gccactcaga ttgccgcagg gtgtggcatc ccacacgtgt   240
acacactcag cacgtccagc cgaagccctg tggtgggcat cagtttccca cagttcggag   300
gtgcagagca gggcttggcc atcctgagac cgcaggcttt ctgtggcttt cagctcttcc   360
acatgccaga cgggctctcc agtttggagt tctagaagtc acctatggag tcagatgggc   420
cacacctcct cagtttactg aatgctgttg cagagaggct gggccagggt gccaccctcg   480
ctggacctgg gggctgcatt cccagggctg tgtttgtgcg ggtgtgtctc ttggcaagat   540
gggaaaaggc cctgacattt gtgccttcct aagcttggcc ttgcagccat cactctgagg   600
aggggggccga gggcaggggg tctcccagga ggctgctcca tctttcttcc agtggccact   660
ccaatcttgg tgccatccgt ggcttagcgt gacactgggg ctgcgaggca ggagcaactg   720
ctctgcccgg gctctggggc cttacagttg ggtctggtgg ggccggcagc tcccaccagg   780
ttgaggacag cccgggccac cttgcccttg aggctgagca cacagtggga gcgggctgcg   840
gtctttgtct ccctggagca ctgtctctgt tgctccagag acagccgcgc agccatgctg   900
gggagctaga gggacttgtg catggatggt ggtcggtggg ggatggggag cctctgggct   960
gagcgtggct cttacctggg gcctctcttc caggcggggc tggtttccct tctcctacac  1020
ccgggtcttg gacagcgatg gcagtgacag gctgcacatg agcctgcagc aagggaagag  1080
cagcagcacg ggcaacctcc tggacaagga cgacctggcc atcccacccc ccgattacgg  1140
cgccgcctcc cgggccttcc ccgcccagac ggccagcggc ttcaagcaga ggccctacag  1200
tgtggccgtg cccgccttct cccaggtcag tgggcggggc cggggctggg aggggcccgc  1260
aggtggaaca gtgggctcag cctgcagtcc cccgttggag cctccgctga ggggcggggc  1320
gcctggggggt ctgggtcttt ggacagccct ggggtgaagg ctgcatgatt tgggaatgtg  1380
tacacacccc tgcttcggcc tcaggctgcc cgcctcgccg cagcaggctc cctgtgtcgg  1440
```

```
catgctgggg ctggggtcag cctgtccctc atggtgccct cagccagcca cgggcaactc   1500

actgctctgt ccaagggggc agcgtctggg ctgggaagtg gctggcctag aggtgggcct   1560

ggacgccgcc gccttttggg agagccaggg gggcaggatc tcttccgtga gaaccacggg   1620

gctccctcag tcacatccat gagatgggag tgcttgctgc tcagccctgg catgtggctg   1680

gacccctttcc agtcagtgtg accctggatt tgggccatct ggtgccggga ggccagaggt   1740

ggaggatcag ggcctgggtc ctaggccctg gtgtgggttc tcggaaaccc gggatcatgg   1800

cggtcctggt atctaggctg gggcagggtg tgagcgtgca tctcaacttg ccgggttcca   1860

gcccgctccg tccagggagg ctcctggggt tggagagttg gagacccctg tctgtctggg   1920

gctcctcagc cagaggtcca gtttgtggga tattggctgg gctagcagct ttgttcccgg   1980

ggccggtctc cagggctggg cctcaggcag tgagtagaga gaagaagaga acccaccttt   2040

ttccgagata acaggtagcc tgggtgacta ctcagctatt gacccacaag tgaggagtcc   2100

ctagattgac agcctgagct gaggccgcag gaggcaacct ggagaggttt gggctctggg   2160

ccgtgggtgt ccacaggtc agcctctggg gtgggctcag tgctgggaga gccaaggagg   2220

ggtctgcatc tgccctaggc cccgggccag gccatgctgg cagatgaagg gcacagccag   2280

ccccagcgcc acacctgggc gctcctccca ggcagtgtca ccctcccagg ggccgggatg   2340

gtacatgtga caagtttcca ggaaactgca gctggggtct gggtctggtc ctgggtccta   2400

caagcaggcg gaggagtccc aggggcccgc ccaggcatgg gtgaggtgct gcaggtgccc   2460

tgcggggggcc tcggctccct gggggcagga ggaggggtct caggcggcca gtcttgcatc   2520

tgtttgggag tgtgcaacaa gcacacaaat tgaggtggcc gctggctgga ggaggtatcc   2580

cctttaattt gggcagtcat tactttacca ctgggaccag ggctccaggc aggtctctga   2640

gtgctgcagc caggagatgg ggagccttcc aaaggaacac ggtttgaacc ttgtccaggc   2700

aggatcacca tttgtgggtg tgtacaggca gcgggtgggg gtgaccacag gccccgtcac   2760

ccggcctgac atgtttctgc ctctgccccc agggcctgga tgactatgga gcgcggtcca   2820

tgagcaggta aggggacttt cagacctgtc tttgggaccg tgggtgggtg tgaagaggcc   2880

gggtgggggca ggtccctctg ctaggacctg gggccacctc ttttccttta gggcccagcc   2940

tggcccttca cccctgtcag agccggggat gtcccttagg gcgtcctgct ttctccgagt   3000

gacacgggaa cccccctggg ccctgccccct ctttcatcgc atctggccgg ccccatccat   3060

ccctgtcagg caaggttggg gagggtagct gaggctggca tccatggctg gggctgcagc   3120

ctcctctgcc ccaatctgtg ctccgccctt gtcctgggtc ttcctggagg gtcaggaggc   3180
```

```
caacgggagc tgctgaaagg ggcattgctc ggtgctggcg gactcgccgc ctgtggctgg   3240
gcagcgtcgt gcagccaggc agccgtcctg tgctttgttt cacagtggca gcggcacgct   3300
ggtgtccaca gtgtgaggac gctgaccccg ggcagccgct gctctgaaga gcttccgcgc   3360
cttccccctg gtctcgtcca ttttcctcct cagctctcgc tggtttgttc ttgggttgtt   3420
tttcttttcc acctgcccca tgccttttgg ttggtgaccc cagactctgt gatcccccag   3480
ggtccatggt gctgctccat ccgccccccc tccctgtgt ttacgcgccc catcctgtgt   3540
gtcccagcct tttgagcaga aactgccagg caggacctgc tgggccgtgc ggggcgccct   3600
cggcctcacc ctgcagtgtc tgtggcactc actgcttttc taaggctcgc cgtgagccag   3660
gtctaaagtt tgaagaaaaa gaaaaatctt                                     3690
```

<210> 652

<211> 5075

<212> DNA

<213> Homo sapiens

<400> 652

```
aaattgtttg gaaaacaagc cttggagagg aagagcagtt gggcaggtgg ccttagaagc    60
agagacagac gtccctgttg ataccactgt tgatggagaa gcactcggct ctcctccatc   120
aggggaaacc aaacctgcca ccccacctgg gatgtggcct ccccagggaa agagtagaga   180
ggctggagct ctggcagaac aggcctggca aggggggctgg aggccaaggc tggtgttggg   240
gctcagatca aagccatcat gctgcatgga gcccaatcag ctgccaacac tcttggtgac   300
acagagccct cacgcctctg gtggaagaag ccagggctgg atgaagctgt ggcgtgcagc   360
ttctgcacag tctccgtgga atctctccta ctctcccgtg agcctttgga ggccttgcag   420
gagctcagcc tttcagcaga aggactgggt tcaaccgccc ctgcaggagc agctccttgg   480
cctcccaggc accagtggtt gggggctgca tcctctgtga gcctcaggtc aagcccatac   540
agtgccctag actcctccct gctctgaccc tgggcccagg agaaaggccg agcacctggc   600
cctctggaga caaggacatg gccattcctc agaggtcctt cccctgacaa gctgggcccc   660
ctgttgtggg gcgcaccact ggacatggta ggggagtggt ggcggccttg cccgaaggca   720
```

ggctgcggga ggggcggggc tggctcacca cagttggttg attcaagtga ggcctggggt　780

cctgctctcc ttccagcttc catctcagga tggctctcag cccccacat tgaagaccaa　840

gaaggtgagg ggcaaaccaa gggccctgcc tatggaagct tcctgtgatg ggctgcaggt　900

agcaggggct ggagagggct gtggttgggg ccacaccagg ctcccccaac ctgagcatcc　960

tggaaggtga cagctcaccc ttggcagtgg caaccccag gccagcagcc ccatctgagg　1020

acagttgtct tcagtgccat tggctgtggc agcacagatg gggggtgtga agacctgagg　1080

ccctgcgact gtagcaccta cagccactgg agccagctct gcacaactca gacctgggtg　1140

gcgaggacat agctttgcag gtgggcagcc acatcccagg gggagcctgc aggccagtgg　1200

cagggtgggg gcaggcagag cagggtctcc ccactgttgc cgctgggctc ctgcggcttg　1260

tggagaaaga tgggtgggcc cacacatatt gctgctccct gaatctgagc ctcggtttcc　1320

ctacctgtga aacgggtacc catggcagct cagaagtgtc tggcagtggg gctgctgggg　1380

cacagtcatg ggggacccga gtcctgctct ccatgtgctc gcttccctca gtggtccctg　1440

atgccagcag aactttctcc caaaaagaga agggcgttcc tgtgagttct tgtgtggggg　1500

gtgggtcaca gagcctctcc aagtgcaggg cagggtgaag ggaggctgag gggtggttga　1560

atggccctgg gaagagctct cttgggctcc tcgtgtctgg gtggcctggg gagcatgctt　1620

ttgggcaggc ggctggcagg gctggtggct gagccactgt ggctcaggat ccccagccca　1680

ggcctgaata gggtaggcag ggagagggga gggtgagtgc atggtgcagg acagtgtgtc　1740

tcctggacag aaacagccct ggtcactcac ggccatggca tagccatggc tacaggaaag　1800

tgctgctgtg tgttgcagcc cctggggccg gctcccaatg gacacccagc agcatctccc　1860

ccactgtgct gagggggagtt gtgccagtgg ggtgctggca gcagtcctgg gaactggggg　1920

aagagccttg gcaagcccat ccctcctcgg gcatcaggga tgggctcacg tgaccaattt　1980

ctcccatgga agatgtttgg ggtgtgccca gaaaatgggg agggccctgt ggggcaggat　2040

tgtattatta aatccagaaa gtctgggctt ccattttag cacaaggcag gcagcccacg　2100

tgccccagcc cagtggccag cctgtgtggg agaggggagt ggggggccaga gggagtgagg　2160

cttctgttac tgcagccagc cagggtggcc agtgtggact ggacagcgag cactgcacca　2220

ggggcactgg tactgacctt gggccatgca cctgatgcct gtgagagtga tctctaggaa　2280

ccactgcaca aggggggcaga tgaggggacc ctgacatggg acagctgagg gttacgccaa　2340

cacgggggggg aaagctgtgt ccaggctcca ccggactccg ccgaggacag agcactgccc　2400

tgactctagg gtgcggggtc actgagggtt aggacagtct ggagttggga gagggccatg　2460

```
ctgcagctgg ggcacatccc acctgcacct ctccagatct tggagatggg acccccaccc  2520

acatgctccc caggtgggtc ccatcctggg gggtgcagga gggagctcca tgtgcccctg  2580

ctgatctgcc catctgagcc tcaggggtcc tgggcactga gagctgggct gggctcagcg  2640

ggggtatgca ttgacattgg ggacagagag gggatgctga agcgggtgct gtctgggtgg  2700

ggcctgcctg atcgacccag caggtgcacc cagcagccgg aggtgcttct agcagagtga  2760

acgccctgtc cttaggggca tgtgagctga ggctggggc ctggagctgc aggggggagga  2820

attggggaga gcagaggtcc caaagatgtc ccaaggcccc aagaccctgg tgaaggaatg  2880

gaggagccag cattggtcag cgagagggga gtgggagttg gatggcctgg ctctgggctg  2940

gacacacggt ttgcagccac agctgagctg tgctgtggag cccagttccc acctgggcat  3000

gtcctgtcct ctgaggcttc cgggagccgg acggccaccg cggtgcaggc gcgcactcaa  3060

gggctttcga ggctcactct gtcggagagg tcagagactg agtgtcgctg ctgaaggctg  3120

tggtggaccg ggctggatcg cggattctag gttagatcgc agatttggga tcgcggattg  3180

gggattggat tggggatttg gggttggatc agggatgtgg gggctggata ggggatttga  3240

ggattggatc ggggatttgg ggttggatcc tggatttggg gccgggtcgg cggtgggggg  3300

cagtgaaaag gtgacagaga gcagcccctg ctcgggagcc ggtggttggg ggtctgagaa  3360

gtcaccacca ccaagaagtt cttcggcttc gggagccgcg ggggcgagat ggcccgggct  3420

ccatagacca cgtctgcacg gttccgggta ccgaatccgg gacgcggaac agcggaaaat  3480

ccaagggcgg ctgtcaagga ccggaggtgg agcgcggcct ggagcgcagg agccggagac  3540

ctggaggccc gggacaagca gcacagaact gctctacatt tggcctgtgc cagcggccat  3600

gtggaagtgg tcactctcct ggtgaacaga caatgccaaa ttgacatctg tgacaaagaa  3660

aagagtgtgc ctttgataca ggcacaggct gtgcattgcc aagaagaggc ttgtgccatt  3720

attctgctgg aacgtggcgc caatccaaac cttaaggatg tctacagcaa cactgctctc  3780

cagtatgctg tgtatagtga gagcacatca ctggcaaaaa aactgctttc ccatgatgca  3840

aatactgaag cactggacaa ggatctcact ctgtcactca ggctggaata aagtggcaca  3900

actgtggctc actgcagcct caacccctg agctcaggtc atcctgctac ctcagcctct  3960

tcagttgctg agactatagg ctcccacctc cactcctagc ctcagacgga gtctcactct  4020

gtcgccaggc tggagtgcag cggcatgatc tcggctcgct gcaaacctct gtctcccgag  4080

ttcacgtgat tctcctacct cagcctcccg agtagctggg actacaggcg tacgccacaa  4140

cgccaggcta attttttttt atttttggta gagacggggg tttcaccatg ttggccagga  4200
```

```
tggtctcaat ctcttgacct cgtaatctgc ctaccttggc ctcccaaagt gctgtgatta   4260

caggcgtgag ccaccgtgcc cagcccgaca tagatggttt ttttagggtt acagcgactt   4320

cttgttgaag ttgtctcaca actacctgat aaagtatttt tgatactgat tttgtaaatc   4380

accttattat taaattttca ataatatcta actctaacat acacttggaa aaatatcacc   4440

tcatacacaa ttcaccttct tttcctcatg tgtacatatt cctatttatt actgaatcca   4500

gttaaggaca cagcaggtgt tatcttcctg ccaaatagat attctgttac tagacgacag   4560

ttttagccca ccattcagtc atctgctgat aattcggcga tgcttaacaa cctgctgaag   4620

tctcaagaaa gcagtggata tgtgagtgag gctggcagtg gtcaattcta cactgaggaa   4680

cgtttccctc tttttcctct tttttttatta ggagctcaaa tcaacctcag gggtcctcag   4740

ttattcactt gcctgtccaa atctttccaa tagattcctg tctcagaata aaagaaaaat   4800

tccaatggct tttaaggccc tgtaggtaac ctcctgacct cagctgctat gagtctctct   4860

cctacttatg gcatttctac tatatgtgaa tcccacctcc cctcatttgt ctgaaaaagg   4920

tcacagataa ctacacttat cattgctgga caaagctcta tccaaatgat ggtcagtgag   4980

ccttcaaata aaaattataa gcaaattata tgtaataata gtaaattatg tataccagtg   5040

ggaaaaataa atcaaatatg gttttggtaa aattc                             5075
```

<210> 653

<211> 1618

<212> DNA

<213> Homo sapiens

<400> 653

```
cagcactttg ggaggccaag gtggacggat cacctgaggt caggagttcg agaccagcct   60

gaccaacatg gcgaaacccc gtctctacta aaaatgcaaa aatcagctgg gcgtggtggt   120

gcgtgcctgt agtcccgact actcgggagg ctgaggcagg agaatcgctt gaacgcggga   180

gaaggacgtt gcagtgagcc gagaacgcac cactgcactc cagcctgggc gacaaatgac   240

actccatctc aaaacataaa aatataaaaa atgtttggct ttggaaacca tgccctgctg   300

cttaacctac tgcgtcctgg ggcaggttcc ttgtcatctc taagctgcag ttttctcatc   360
```

ttcgaaatag ttctaagccc ccctatggct cttttgggtt tcagagtttg taatatagcg　420

cctttattct ccacacagag caggcactca caactctcct tttccactgt cctctcttcc　480

ctggtctctg atctctcgag ccatcctaat tcctggaccc cttgcagtgt cttgcccagc　540

ttgggttccc cagcactgtc ctccacctcc tggccacagc cctatgcacc tgcagcgggg　600

cccactgggc aggtgttggc actggcctcc atggtcacag tagcccctac tgcacgggga　660

cacgcaggtg aagccgctct gggggctgta gaccaggtcg tagcccttgt agccatcgca　720

tctgaagtaa gccttcagcg tgctcacgtt cactgtcggg aaggacacag attaacacag　780

aaagcaaccg atgaacacta aatcagtacc ttttcagcca cgaattcctt ttcgggtgtt　840

tatcctgaga ataattgga gaagtgcaca gatacatatg cccctggacg ttcagatcag　900

tgtggtggat aatagtaacg tttcagaagt agggtctggt taaataaact actgcacatc　960

cttaccaagg gatggtgctt cctatggaaa aagtttccta gggaaaaagt ttcctaggga　1020

aaaaggttcc tgtggaaaaa ggttcctatg gaaaatgctt tcctgaagag cacatgcttt　1080

gaaggtggcc agacttgggt ggaaactgaa actctgctag taactagatg tgtaattcag　1140

ggaacattcc ttcactcttt cagcttcagt ttccttatct ttaaaaggaa atgatcataa　1200

tagcacttat gctgctgtga gatttaaatg agataatgtg tccacagtac tcggtacagt　1260

gccggacaca cagtaagcac tcaaacaatg gtaatgatta ttataatgta ttttaaaata　1320

tgacactata ttcaaacata ccattataat atgtcaaatg ggaatgtgga cagaatatat　1380

gagacaacct gttcacaact gtttaatgag gaggttttcc aacattagga atgatttgat　1440

ccttcagtaa aaaatggatg tctgaaggtt cctaggcata aaagaaagtt cagaaggata　1500

tgtaggaaat actgttgtct ctctggggat tgggattaca gggttttttt cctcttttct　1560

ttttgttaag tttgtgtttc ctaaagtttc tgcaataaac atacgatgct tgtataat　1618

<210> 654

<211> 3895

<212> DNA

<213> Homo sapiens

<400> 654

agatcagtta cctcctagcc tttcctagtc acattatccc caggctacag atgaggaaac 60

tgaggcccaa ggattccaga gagcctgccc cggggtcacc ggtgcggtcc ggatgtctcc 120

aaaggctctc ccactactct ggaattcaga ggcccttcct cgtgctgccg ccgctgatgg 180

agtggatccg ggtggccgtg gcgcacgccg gccaccgccg cagcttctcc atggacagcg 240

acgacgtccg ccaggcggcc cggctgctgc tgcccggcgt ggactgcgag ccgcgccagc 300

tcagggccga cgactgcttt tgtgcatctc gaaagctgga tgcggtggcc atcgaagcca 360

agtttaagca ggacctgggt ttccggatgc tgaactgtgg acgaacagac ctggtgaagc 420

aggcagtgtc tctgctgggg cccgatggga tcaacaccat gagcgaacag ggcatgactc 480

ccctgatgta tgcctgcgtc cgtggggacg aggcgatggt tcagatgctg ctggatgccg 540

gagctgacct gaatgtggag gttgtcagta ctcctcataa atatccatcc gtccaccccg 600

agacccgcca ttggacggtt ctgacttttg ctgtgttgca tggacatatt cctgtagttc 660

agctcctcct ggatgctggg gccaaggtgg aaggctcagt ggagcatggc gaggagaact 720

actcggaaac acccctccag ctggcagctg ctgtaggaaa ttttgagctg gttagtttgc 780

tgttggagcg tggtgccgat cccctgatag gaaccatgta caggaatgga atttctacaa 840

ccccccaggg tgatatgaac tctttcagcc aggctgcagc ccacggacac aggaatgtgt 900

tccgcaaact gctcgcccag ccagagaagg agaagagtga tatcctgtcc ctggaggaga 960

ttctggccga ggggactgac ctggcggaga cagccccgcc ccccttgtgc gccagccgca 1020

acagcaaggc caaactgagg gccctgaggg aggccatgta tcacagcgct gagcatggct 1080

acgtggatgt cacaattgat atcaggagca taggcgtccc gtggactctg cacacgtggc 1140

tggagtcttt gcggatcgcc ttccagcagc accgcaggcc tctcatccag tgcttgttaa 1200

aggagtttaa gaccattcag gaggaggaat acacggagga gctcgttacc caaggcctgc 1260

ccctgatgtt tgagatcctg aaagcgagca agaatgaagt gatcagccag cagctgtgcg 1320

tcatcttcac acactgctac gggccctacc ccatccccaa gctcacagaa atcaaacgga 1380

aacagacctc gcgcttggat cctcattttc ttaacaataa agaaatgtct gatgttacat 1440

ttctggtaga aggaagacca ttttatgctc acaaagtgct gttatttaca gcctctccaa 1500

ggttcaaagc actcctctcc agcaagccga caaatgatgg cacctgcata gagattggtt 1560

atgtgaaata ctccatcttt cagctggtta tgcagtatct ctactatggt ggcccagagt 1620

cactgctcat taaaaacaat gagatcatgg agcttctgtc tgctgctaag ttttttccagc 1680

tggaggcttt gcagcgacac tgtgagatta tctgtgcgaa aagcatcaat accgacaact 1740

gtgtggatat ttacaaccat gccaagtttc ttggagtcac agagctctca gcatattgcg 1800

aaggctactt tctcaaaaac atgatggtcc tcattgaaaa cgaagcattc aagcagctcc 1860

tgtatgacaa aaatggtgaa gggaccggcc aggatgtgct ccaggactta cagaggacgt 1920

tggccatcag aattcagtcc atccacttgt cgtcttccaa aggttccgtg gtatgaaacg 1980

cctagtgcag ggaatgcttc ccgggaactt tccagttctc ctgccgcatt ggctttacac 2040

aaacacagac aaattccacc tggcacctgt ttttggctgg gccaaggagc tgcctctact 2100

gctcccacgt gttcctgttg aaaaacaaag gactttccac tggtctgcag atcagatcag 2160

ctgggtccag agtttaatgg gcaactggac aaccaagtta accccaattg aaagcacccc 2220

taggaccatt gaacacccac tgccggggac cactgtccag tgaatggatt gaggcctttt 2280

aaaggtcact caggttccag gttgacagtt ggaggacttc accgtaccaa ccctgaagag 2340

attgtattac acattaagga ccttggtagc tgtgcttcag caaacgtcaa ccatggtagc 2400

aaattggtga ggctgtgacc aataatgagg aaataatctg gcaaattttt aggggtggga 2460

actttttaa atgttcattt aaaaaaaaac aaaaacaggg cagtcttgta gtttaaaata 2520

tatttctaaa agcttaacag ttcgttttca actaaattgt gtttagggat ctgtgtttga 2580

gatttttctt tatttctttt ttttttaaa tagtaagtca caggtccaca ctgtgtaaac 2640

atgcatctga taagatactg ctgatattct aaacaagttg aaataatctt gccttagtga 2700

tcatgattac acaaaagagg tgcactgcca ataagtatct ctaattcaat agttgaaagc 2760

aacctgcatg ctaatcgtgg tttcggggtg agaataaaac accccacat aacatgcatt 2820

tgcatgggcc cgaacctgtg aaatgttacg tttgtgcttc atttttgcca aggtaaaaat 2880

gttccatcat ttctagctaa aactccattt ggtgaaacca acatatccat ttcttttcct 2940

agttacggat gatttgggga tgcttttgca gaaatgtgtt catagatgat gctgaatggg 3000

ggagggggc agcacgtcag ggaatttact attaatccca gagttttctc tgtattctca 3060

gaagatgtta atagtttgtt actagccaga gagtatgact atgttagatt attttaaag 3120

atgaaacatg tatgatagga tggattcttt ctgtattctg agagtgtaca gtacaggatt 3180

attataatga aagtttatat caacagggtt tcgttggctc tgccatatat tataagcaaa 3240

agagattggt aaagtgccac agtattccag ataactttc agttgcggcc tttcttctcg 3300

ttctttaatt tgaaacctag atacatgcag taaaaactag gagaatgact tttacccttg 3360

gggacagcca agttttgttg ataaacctat ttcctagcat gccttcagga agttgtgcca 3420

gaccctagat tgtgaaggac ccactgttct tctgttgtac gagctccctg aaccattgtt 3480

cagaggacca atgtcacatc gcttcatggg catggcccat ggagcatctg ggtgatatct　3540

gtctacagta ttggctcttc tgcgaggctg atacacaagg cctctcttcc acatgatcat　3600

ttgcaaacct cccccagccc ctaccatcca atgtggaagg aaaacaagaa ctgcctgaag　3660

aagagtccaa gctacagata cacagcgtgt gcattgcggc tgtcaccttc ctcctcccac　3720

ttctgtatcc tcagagatgc tgcgtggatg tttccttaac ctcagctgac ttccctgtga　3780

atgtctaatg ctagttcagg gcctccaggc attgatttgt acagtggtaa ctcccaatga　3840

ggcttctgtt atcatttggt gtgctttctc tgtcattaaa agaaatgatt ttccc　3895

<210> 655

<211> 3734

<212> DNA

<213> Homo sapiens

<400> 655

aaaaactagc atggagatcc cctagaggtc ggattttcaa cataatctca gtgagcccag　60

gactccaatg tgacaatgtg gaactggaaa gacgagcaag aaaagcccct ccgttcccgc　120

cagcgttggg cattccttct gcagtccagg ctgtccccgt cactcgggat cacagccaag　180

cggtgggttc tgtgtggtgc ttggctccta gggcctcgcg gaagccatgt tcttctccat　240

tcagcttcat ggagagactt cccaggtttt cagcccacgc tacgaagcta gacaggagag　300

tggccccccac ccgccctgtt tggaacccag ctggggcatg cggtgtttgg aacacatggg　360

cagattgggg agaggccaga agagcctcat ccagagccaa ggacaagcct tgaggctgaa　420

gagctcacca aggccactac aagagagcaa aaaaaagagc ctcagagact cctcgataaa　480

taaccagaac agagagcaaa ggtggagagc aggagggcaa ggcactgaga ctttagaagc　540

ttccagggag aagaagagtc agatgcttga agatgcctcc tcaatgctgc aaagctctga　600

gggaaagtgg ctttgatgga gaattagaga tccgggcaag ttggtccttt ctggaaaagc　660

tgcttgggga tacactccag caaaaagaga atccaccagc aaacaggaag gcatgagcag　720

cccaggaagt atgaacacaa ccaagggagg gctgtggcag tatctgtcct gctgggccgc　780

acctcggggc tggaggtggg tagaggggaa agaaggggta atggctggaa aagtgtccca　840

tgctgacact aagccctggt agagaccacc tgctacgggt cagcacattt cactgagcag   900

gagatgcccc tagaagacaa gggatagagg tataaagaaa gtcctctccc tgactgcaag   960

gagctagagg ggagacaggc acaagaacaa cactggaatg gggacaatat cagccgcaaa   1020

ggaagcagag agcagggctc cggtggtcag ccctgggtgg ggtcaggagt ccacgagtga   1080

tgagggctaa gtctgaaggc cagaagggtg tcggcagcca cggagagaac aagtacagtt   1140

aaccctggga aggcagaggc caggtggtct caggaccacg gtcaggaaga gatgcctcac   1200

gtggcgggga cacagcggga gcagttcagg caccacggct cgtccactgg ggccccagcc   1260

tctcactgca agcagtgcag gtggacatct gccccagagg cagcagggag cgtgtgtccc   1320

aaagccccca gcactcatgc cctgtgcagg cgccgagcag ccggccctgg ccggggcggt   1380

tccctcctag gcctgtccag gactcggccc ccacaaacac atggaccgac agacgaaatc   1440

cctcaggagt gtctctgcgc cgacgccatg gcacccacga aaagtgccac acataaagtc   1500

agtctgcaaa tgccaacgtt acccagtctt catgtcacat ttcacctaca gatcccttcc   1560

gaattgtaac aatatctcat aaatgtttga gcttcaaagg aaaggtcctt tccgacgttc   1620

agatatatat actccgtggc tgcctgcgag ccgtctccca ggcgggtgtg tccttggtcc   1680

gccttctggg aagtgtgcac aggcaaggaa tcccatgtca gcctcaggac ggcccagcgg   1740

tcactctcac ctcatcagtg acaggaaggt cttgatgagc aacttggcca aggccacaca   1800

gctaaggtgt ggcccaccaa ccctgagccc cactacttcc acctgtcaca gcttccagaa   1860

agttctctgc agtgaactgc tatcaaccca attctgacca actgtaatta cactgtttcc   1920

agataacacc ttaattctga ggcagttaaa atgcattgtg tacatatact atgtgactct   1980

catcaatagc aaaccaacgt cagttcagtc caggagaacc cacccagggt gggcagctct   2040

agcctagggt gtcttcagta gcacctgcaa ggctgtcctt cccccgtctt gtcagggaat   2100

ccagctctac cactggcgct gtaacagaca cagggctgct ggaaattcca ggagtccagc   2160

cccagctgcc tgtggccgcc catggacgga cctggccagg ccccctggga gggggatttc   2220

aaagcatcaa ggagccggcc tggctgacga ggctccagac cagctgtttg ccacacacgc   2280

ccccgtactg cagggttgac cagtgagggc ctcaatcttc cgcagggaac gccgggccac   2340

aacgtcgacg cacgaccctg ggggttcctg ccataaaaca gtgagggatt ctggccaggc   2400

tgctctgccc tctgttccgg tgagcctggg catggtgccc actcttgggt tcggtttcct   2460

tattgcgcac acagacagca gcaggcctga ctgcaggagg caccggcacc catgggcggc   2520

cggcactgcc cctacacacc aagaacatgg cacccaggtc ccgctgctta ggccggaaac   2580

tcctgtcaca taagctttta ctcgtccaga tttcagccat tcctgggagt gacatctgtg 2640

ctgaggggaa gctcagtgtc agtgtcaggc atccccgacc acctcgggca gcctcggtcc 2700

tcccaggagc cgtcacggcc cgagaacgcc gctgcccaga tgtgaaccgg gtgtccagga 2760

tacgcaggct gcacagtggc gtgaatgaag ggcagggctg aactccaggg cctacggaca 2820

atcgctgcac agccgggcca gtggctgacc ctgcttcctc gctgtccact gggggtagtg 2880

gcgttgtcac caggaggtca gcaccgggca gggtgctact tcagcatctg ctcaacgcag 2940

taatcacact agggacccga gtccacacgt caggaagaca ggtgtgtctt caactctgag 3000

ccctgtgaaa atgccgcttt ccgctaacac actccggctc ccacagcaca gcagggcatg 3060

cccgacaccc caggacgccc gcggtatgca cgtctgtgtg cagtgagcac acccctagca 3120

cctacacacc tcggtggcag cacatggaaa cgcccaggcc cgcggtggga aggagccagc 3180

cccaggacgg atgcaaagtc aggttgaatg cagaggcctg tcgctggcag ccggcctctc 3240

caggtctggc ttcgaagctt ccccgacagg gcaggcgttt ctgtgttctc ctgatctgta 3300

catctttact acatgtctgc tgagacaatc tgcctaaggg taagcctccc tcagttcaat 3360

gtcttttaac aaggggagtt tccacagaat acatttggtt atgtgtttaa ttacaagtgt 3420

ttcaatagct ataaacattg taaaattcag tatcaagtga aatatttgga gagcccctat 3480

ggcaacttgg aaaaaccctg ggattctgag gaacagggag tagcgcacag tcccagtaaa 3540

atccagaact ttctagaagg agataaatgc aggatgactg cctgcttgcc ctgggccagc 3600

tcagccagaa aaccatgtcc ctgaaagatg ggaaactggt tccttgatac agcagaaaaa 3660

cactgattct accccaaatg acccgtcttt attgcttgtt taattacctg tttaattata 3720

tcttcaccac ctgc 3734

<210> 656

<211> 5550

<212> DNA

<213> Homo sapiens

<400> 656

aatttctcgg aggctgttgg gcagctttgc agatgagaag tgtatcagcc ccttaagggt   60

ttcgttcaga tgagacgagg cggggagcctt gagctgacag ggctgcgtgg gttcaggaga　120

gggagcagaa aactctcccg agcccccccag cccccgcctt gcacccttgg ctgctcccag　180

aggctctcca atctgccaga cttctctgga tctagacttt agaaggtgca gagagaggct　240

aaacatattt ttgactggta tgaacccatt ctactttcat gcagtaaata taattttaca　300

ctgcttagtg actcttgtgc tgatgtacac ctgtgataaa actgtcttca agaatcgtgg　360

acttgctttt gtaacggcat tgctttttgc tgtacatcct attcatactg aggcggtggc　420

tgggatcgtt ggcagagcgg acgtgttagc gtgtctgctg tttctattgg cctttctctc　480

gtacaacagg agtctggatc agggctgtgt tgggggaagt ttcccttcca cggtgtctcc　540

cttcttcttg ctgctcagtt tgtttctggg gacctgtgcg atgctggtga aagagacagg　600

catcacggtg tttggagtgt gcttggttta tgacctcttt tccctttcca acaagcaaga　660

caagtcgagc aatggggccc tctgtccacg cagcccacag cagcccggga gcccccagcc　720

ctcctcactg ccaggccatc ctcaccggga gaatgggaag cagcagcggt tccctcacaa　780

aggagcttgg ggtggctgcc actctccact gccaccagaa cccaagagca gtggattccc　840

agtgtcccca cgagctgtgt ggtccatgat gaggtatctg agagcaagca gcaatagaaa　900

tttcctgctt accatgagac cattttaaa aagggccatt ttggtcctaa gttatgtgct　960

tgtcattttg tacttccgtc tgtggataat gggaggatct atgcccctct tttcagagca　1020

ggataatcca gcttcatttt cgccttacat tcttacgaga ttcctcacct attcctacct　1080

cttggccttc aatgtgtggc ttctgcttgc acccgtgacc ctgtgctatg actggcaggt　1140

cggcagtatt cctctggtag agaccatatg ggacatgcgg aacttagcca ccatctttct　1200

ggcggttgtg atggccttat tgagcctgca ctgcttagca gcctttaaga gactggagca　1260

caaggaggtt ttagtcggct tgttgttcct ggtgttcccg ttcattccag ccagcaacct　1320

cttcttcagg gtgggttttg tggtggcgga gagagtcctt tacatgccta gcatgggcta　1380

ctgcatcctt tttgtgcatg gactgagcaa gctctgcact tggctgaatc gatgtggggc　1440

caccaccctg attgtgtcca ctgtgttgct gctgttgctt ttctcttgga aaactgtgaa　1500

acagaatgaa atttggctgt caagagagtc cctattcagg tctggagttc aaactctgcc　1560

ccacaatgcc aaggttcact acaactatgc caatttcctg aaggaccaag gtcggaacaa　1620

ggaagcgatc taccactaca gaacagctct caagttgtat ccacgccatg caagtgcgct　1680

caacaacctt ggaacactga cgagagacac agcagaggca aagatgtact atcagagggc　1740

tctccagctc catccacagc ataaccgggc tcttttcaat ctggggaatc tcctcaagtc　1800

```
ccaggagaaa aaggaagaag ctatcacctt actgaaggat tccatcaaat atggtccaga   1860

gtttgcagat gcatattcaa gcttagcttc gttattggct gagcaggtaa ttgtttcaca   1920

cagtagtttt tttcaatgtt attgttacat gtataaatta atgttacaca gattttttgta  1980

ctaatgattt aatttgtaaa cccatattgg acaaccaatc tctatgtcag tttcttttgg   2040

acagaaatta caagcctaat tttctcactc caatattctc tgtgtatcgc aggtcgcttt   2100

tagacaaaga tggtccgtta ttggccattg atatattctc tctcactttg gtacagaatc   2160

tatcaagaac aatacatgat atttgatgtt tttattacca cttacttgta atatttttct   2220

gaggaattgc aagtggtcta agatcgctga actcaacatg gagcaatttg ataatcctac   2280

aaattctgtt ttaacatctg ttagaatatt acagaggctc gtgagagagg ctcctaagag   2340

aatagttttt atggcataaa acagagatga gttttcaatc ccctccttct tttcagtcgt   2400

gtctaaatga tttgatacca gttttcagag tcttagatgc atgacccctg ctatggagaa   2460

acagatataa gttgtcttct ctctaaattg atgatatagt tttgttgaca cacatagtgc   2520

ccttgataga cagtagattc tgctaccata gaattaccag attatcttta aaactcaaac   2580

tcaacatctc tgcaacatgc ccggcagcat tcagttggct taagggtaat aagtgatttg   2640

atactgtatg tcagttttgt agggagcgat ttgcatcaga aatttttgga ggctccagca   2700

agaagcaaaa ttaggtcatt ctatgaatat ttaagtgaca aagaatataa acctagttgt   2760

tttgcccttt ctccctgtag gataggcggg ctttagatta aaaacctctg tctgtgttgg   2820

atgattttaa cgcatgcttt agtatgaagt gtgagctaaa atggtgatgg atgtgtctgt   2880

gctatacact ggcagtcctc agctgccctt ggcttgtgtt gaaacagaca cagaggctgg   2940

cttcatcagt gttgcttcat ctcacctcac cctggaccct tcctttctcat aagcccctcc   3000

ccctgcctct gacaggctgg ttgtttttgca gttactcaga tgtgctaagt gtgcttctct   3060

ctcacagcct ttgcactaac tgttcctgca gcacttctct tccagatagt tatcttagag   3120

tttccaagat atttcatatc atgctggttt ctgaccaaat gttactatat cagagaggtc   3180

ttctgagatg accctttgta aataggaacc ttccgcagcc catcatgttc tctactacca   3240

tgtcctgcct tactttccct atagtattta tcaccatcta aaacacattt atttgtttat   3300

ggactttctg ccaccgttag aatatttgac tctatgagaa cagctatgtg ttttattcat   3360

ctaagctcat tttaaaaatg atcaagattt taatgatgtt gaactttatt ttagttcctt   3420

ctgtagtatc tttgcattca gccttactat taacaaattt tgtagcagat ggaagtttaa   3480

acaggataac gtatatactt tttccttact tgtgtgtaag aagtgtcaga tggcttattt   3540
```

aaaattgatt acttgataaa tttaatctttt tgtgaactgc agtggcaaat tgctatcaag 3600

ttattgcatt ttacatagtt gaagttgtga acaattgtta agaacaacaa atgatgacta 3660

ggatcattat cttttcttac acacaaaggt cccatctttt agcactttc tgttctagat 3720

gtgaatgtaa aatgatgtga gatctaagaa tggaactgaa agattgaaaa gttctttctt 3780

ctgccccttt gggcatgaaa acaatgaagc agctgttgag cataactcag gactgccttc 3840

ccctctctga ctttcaacat cctatcttca tgtttttaac tatttagtca taaaagagtg 3900

catcagatgt gcaagcaaga cacaaactgt tagagaaaaa cccacctagc ttaacatttt 3960

ttggtagcaa atgaattcat ttcttggttg cacaacttta tttaacagca tcctggcatt 4020

tcaaacaccc agagtgtatg aaatcagtat tgacaaacct tgggcaacat gtaacacaca 4080

gtgaagccat cccccttagtc aagcgacttg tcctccattg ccaccatctg tccacatgca 4140

cagcccacgc ggactgtggt tgtgggtcag tgtcatgcca aaaagctctt tcctacactc 4200

agctgaaatc agccattttg caggcagttt ttcagaagct ggatgaaagg attcactctg 4260

tatttacatc agcctgacat attctgtatt tatatcagcc tgacatttct gattttctag 4320

gacttttag ttttttttcct gccgtacagt gtattgacta ccatttccag ctctttcagt 4380

tggcaaactt gataatagtt ttagttaaat aactagtttg tgttttcgat tttaaaaaat 4440

gttgtgaaga tcagtattag ttaggaagcc ctgcagcata tctgtagaac cttctttcca 4500

ggttgacctt tatcttatgc cagactcttt gggtaaactt attcaagcat tcgttaattt 4560

gttgaattat attatcctct agctcacctt tctcagtctt gtctacagag atgttttgag 4620

acacatttc agacacctgc caaaatcctt cccctgatgt aaggctgcaa atctataata 4680

tcaaaaaagg aaactaggtt tatttggtat accttgctct tattataagc atgctgctgt 4740

ctgttgacat catttcccat cctcagtgcc aataaaacca tgaatgtagg atttgtcgga 4800

aactaatatt gtgttcctta ctctgttgta acctgagggg agaaatttaa tctgttcgcg 4860

caaagtaggg gatttgacaa atttgaaaaa tagattaatg agttgaaaag acattatatg 4920

gtagaacata ttaaggccat aatggagccc aagttttaca ttgatagata ataggaagta 4980

acggtaaata tctgaggaga gctttctaaa acatgtgagg aagaaaacct tgtggaaaac 5040

acatggtgta ttttggaaaa ggctttttcta tgcattctgg tgtgagtagt tgagagcctt 5100

gtttgcagaa gaaagtgagg gaatggatag aatatcgtgg aaaaagaaag atttccacgg 5160

tacatagggga ctgtcagcat gtaaaggttg aatggaaaag aaaaatagaa aattaagaac 5220

tccaggtcag aacccctaag aaaatgagaa gatttatggc cactgataga cgtggataag 5280

```
ccagacagaa gcaatatttt aggaaagaaa taagatgagt gtcaacattg tttccagtta   5340

aacaagtaat ataaatatat aaaggaaact gtgaaaactc agagaaaata acgtatacat   5400

cctttattca taatataata cctggagaca acaaatatta tcattcttta atattatgca   5460

tctcttttaa atatatttat gtgttccata ctaatattta tacactgttt gtatcctgtt   5520

tttttcactt gccattaaat tatacatact                                    5550
```

<210> 657

<211> 4038

<212> DNA

<213> Homo sapiens

<400> 657

```
cttagccagg cattgtggcg tgtgcctgta ttcccaggta ctcaggaggc tgagacagga    60

gaattgcttg aacccgggag gcagaggttg ccgtgagccg agatcacgcc actccactcc   120

agcctgagcg acagagcaag actgtatctc aaaaaaaaga tgtgaaagta gagattttac   180

cctgatttct aacatctcaa ggtttctcca catatttaag aaagtattat aaattttcaa   240

gccagtgcag tataatagtt tcagatgaaa tgaaggggtt aaataacaga ttaccataac   300

tccttaaata aataatagat taccataact ccaaatggag agaaagtatg gttttttttct   360

ctcttacgga aagttcatgg tctttatgaa aaatccaacc agaagccttt tcacacaggt   420

gcgacacatg attgcagatg ggatgattca cctgtgcatc tatgctgtgt ctgccatcac   480

caaggatgct gaggtcacca tagcatttga ttatgagtat agtaactgta attataaagt   540

ggactgtgcc tgtcacaagg gaaaccggaa ttgtcctata caaaaaagga tcctaatgc    600

tacagaactg ccactcctac cacctcctcc aagcctaccc accattggag cagagactag   660

acgtagaaaa gcacgacgga aagagctaga gatggagcag cagaatgagg cttcagagga   720

gaataatgac cagcaatcac aagaagttcc agaaaaagta actgtatcca gtgatcatga   780

ggaagtagac aatccagaag aaaaaccaga agaagagaaa gaagaggtta tagatgacca   840

ggagaaccta gctcatagca ggaggaccag ggaagataga aaggtagaag ccatcatgca   900

tgcttttgaa aacttagaga aaagaaagaa gcggcgggat cagcccttgg aacagagcaa   960
```

●

```
ctctgatgta gagattacta caaccacctc agagactcct gttggtgaag agacaaaaac  1020

tgaagcccct gaatctgaag ttagcaactc tgtttcaaat gttaccatcc caagcacccc  1080

acagagtgtt ggtgtgaata cccggaggtc ttcccaagca ggggatattg ctgcagaaaa  1140

actagtcccc aagccacctc cagcaaagcc ttctaggccc cggccgaaga gtcgaatttc  1200

tcggtacagg accagttcag cccaaagact aaagcgtcag aagcaggcca atgcacagca  1260

ggcagaattg tcacaagctg ccttggaaga gggaggaagt aacagtttag taactcctac  1320

tgaagctgga agtctagaca gttcaggaga aaacaggcca ttaacagggt ctgacccaac  1380

tgtggtgtca attactggat cccatgtcaa ccgtgctgca tctaaatacc ccaaaaccaa  1440

aaagtatcta gttacagaat ggttgaatga caaagcagag aagcaagagt gccctgttga  1500

gtgccctttacgtatcacaa cggatccaac tgtactggca acgaccctaa acatgttacc  1560

aggtcttatc cattccccgt taatttgcac cacccccaaa cactacattc gctttggctc  1620

acccttttatc cctgagagac gtcgaaggcc ccttctgcct gatggcacat tcagctcctg  1680

taagaagcgc tggataaaac aagccttaga agaagggatg actcaaacat catctgtacc  1740

ccaagagact agaactcagc acctatacca aagcaatgag aatagtagct cttctagtat  1800

ctgcaaagac aatgcagact tgttgagccc attaaagaaa tggaagtctc gctatctgat  1860

ggagcagaat gtcaccaagt tacttcggcc tctgtctcca gtcacaccac cccctcccaa  1920

ttcaggctca aagagtcccc agctggccac acctggctca tctcacccag gagaagagga  1980

gtgtcgaaat ggatacagcc tcatgttttc accagtcaca tctcttacta ctgctagtcg  2040

ctgcaacact cctctacagt ttgagctttg tcaccgaaaa gacctggatt tggcaaaagt  2100

aggatacctt gactccaaca ctaacagctg tgctgataga ccttccctac tcaactcagg  2160

tcattctgac ctggctcctc atccctccct cggacccact tctgagactg gtttcccaag  2220

cagaagtgga gatggacatc agaccctcgt gagaaactca gaccaggcat tcggacaga  2280

gttcaacttg atgtatgcct actcccctttt gaatgctatg cctcgagcag atggactgta  2340

tcgaggatct cctctagtgg gggataggaa gcctttacat ttggatgggg gatattgttc  2400

ccctgcagaa ggattttcca gcagatatga acatggctta atgaaagacc tctctcgtgg  2460

atccttgtca cctggtggtg aaagggcctg tgaaggagtc ccatctgccc cccagaaccc  2520

accacagagg aaaaaagtat ccctgctgga gtaccgaaaa cggaaacaag aagctaagga  2580

aaattctgct ggtgggggag gtgactctgc acagagcaaa agcaagtctg caggagctgg  2640

gcaaggcagc agtaactccg tttccgacac tggtgcccat ggtgtgcagg gatcctcagc  2700
```

```
ccgaactcca tcttcccctc acaaaaaatt ctccccatct cattcctcta tgtcccattt   2760

ggaggcggta agcccatcag attccagagg cacttcttca tctcactgca gacctcaaga   2820

gaatatcagc agtaggtgga tggttcccac atcagtagaa cgactccgag aaggagggag   2880

catccccaag gtcctccgaa gcagcgtgag ggtggcccaa aagggagagc cctctcccac   2940

atgggagagt aacatcacag agaaagactc agaccctgca gatggagaag gcccagagac   3000

attaagctca gcactctcta aaggagcaac agtttacagc ccttccagat acagctacca   3060

gctcctgcag tgtgatagtc ctcggacaga atcacaaagc ctccttcagc agagttcctc   3120

ccccttcaga ggacatccta cacagtctcc aggatacagt tatcgaacta ctgcactgag   3180

acctggaaac cccccctctc acggttcttc agaatcatcc ctctcttcca cgtcctattc   3240

cagccccgcc caccctgtgt ccatagactc gttggcccca tttacgggga caccagggta   3300

ttttagcagc cagccacatt ctggaaacag cactggcagc aatcttccaa ggaggagctg   3360

cccttctagt gctgctagcc ctaccctgca gggaccctca gactcgccaa cctcagattc   3420

agtttctcag tccagcacag gaactctgag ttccacctcc tttcctcaga actctaggtc   3480

gtcattgcca tcagacttac ggactatcag tctgcccagt gctgggcagt cagctgtcta   3540

ccaggcctcc agggtatctg cggtttccaa ttcacagcac tacccacacc gtgggagtgg   3600

gggtgtgcac cagtaccgac tccagccact gcaagggtca ggagtcaaga ctcagacggg   3660

actttcctag ggcttctgga tttgggcaaa cagaactgaa tgagcccata gctgcttcct   3720

tccagctgcc tctggaacct aggccgagca tattgctgag gaacgggggg tacaaggtgc   3780

cagaggattg ggtctggtgg acaagaaaca agacttgtgg tcacaattgg cctctggcct   3840

tggagaaagc tgtaaatctt gtctgaagca gagactataa agaagtttct ccctgctgtc   3900

aagggtacat tgttgacaag caaatggtgt ttcggttagt aacggttcta agtgcaatga   3960

gttgtgttga agcctccgtc tcccatcctt gcctgtagcc cgtagtcact tgtgcagtga   4020

ggacatcttt ttaaattt                                                 4038
```

```
<210> 658

<211> 5758

<212> DNA

<213> Homo sapiens
```

<400> 658

atccgatgat gaaattctaa cactttgcac aagttccaga aaaagaaaca aacccaaatg　　60

ggatttggat gatgaaatcc tgcagttgga aacacctcct aaataccaca cgcagattga　120

ttatgtccac tgtcttgtac cagacctcct tcagatcaat aacaacccat gttactgggg　180

agtgatggat aaatacgcag ccgaagcact actggaagga aaaccagagg gtaccttttt　240

acttcgagac tcagcacagg aagactattt attctctgtt agttttagac gctatagtcg　300

ttctcttcat gctagaattg aacagtggaa tcacaacttt agctttgatg cacatgaccc　360

ctgtgtcttc cattctcctg acattactgg gctcctagaa cattataagg acccaagcgc　420

ctgtatgttc tttgaaccac ttctatccac tcccttaatt cggactttcc ctttttccct　480

gcagcatata tgcagaacag ttatttgtaa ctgtacaact tatgatggca tcgatgccct　540

tccaattcct tcttctatga aattatatct gaaggaatat cattataaat caaaagttag　600

agtactcagg attgatgcac cagaacagca atgctagtaa caggatggga acatgggaat　660

gataatatat attttttcctt ttaatatttt attttctttt ttatgccact ttggattttt　720

ctacaaaggc agtggtgtcc aaaataaaat ctctgcccta aattttacta ataaatccat　780

ttttctagtg atacacaaat tgtttaaggt tatacactcg agcttaaata gatattttta　840

accaggtgtt tggttttttgt ttttaccgtg taggttgtat acttacattt tttctttcct　900

taatttatac atgatccttt ttccttaatt tatacatgat ccaggcacat ttgaaatttg　960

gtaggcattg caaacacatt tgaatattgt gtatttcata ctattcttta aaagtaatct　1020

tatgtccttt cctacatgta aaatattttg ttaatctatg ccattagtag tattatatat　1080

aaaatatagt tcccgtccc ccttttcatt gagtttgata ttcttcagta aagctgaatg　1140

ttgtaattca ccattcatac taatgttatt gactttgta acttactaat agggatgtta　1200

aaagtaacaa aaccaagtca aacttggtgt attttattt taaatattaa ctctaaagca　1260

ggattactaa atttgattaa tctggtcaat gagaatcaaa tggaaacata tcattctgga　1320

ggtgcactta ctcttctaca atgtggccgg atcatttgtc attcctgaat aggtctttct　1380

ctcaacctgc aagagctaaa ccatcttcaa aacataaatc ttgttccttt ctcattggaa　1440

gctttgaaaa taatgataac actattagta gctagtagtt actaaagtgc taaagtaatt　1500

gtggggtttt tctgtattag cttatgaact gttgcttcta cttagccctt ttatagaaac　1560

tctgagctgt tactttgggg aaattccaca atgtattagc agccacaaat ttccactggt　1620

aaccaaagag tacctaagta gtttttcatt attttaagtt gaatttgaat aaagattcca 1680

gaaataaaca tggagctcag tattcaggaa gcttaatact gttttt gatc tacaagatcc 1740

aaataattat ccctatcttc agaattaact tagtctgtaa tgtggcttca aaaaagaaa 1800

gccttttgac agctacatga cttacaccat acagaacagt actggacaaa aggggtgata 1860

ttttaaattt actatcccag gaacagggca acgttttttag aaacatcttt agcccaaagt 1920

aactagtaaa aataaatgga gtggtatcct atcttctttt tttaaggaat caatgaataa 1980

taaatgtaga tagacaattt tcttctggtg agctgtctaa ccctttgtac acattgacat 2040

ttttaatatc gtaactgatt tcttgatgct agtttagcta tattaggaaa ctgcttctac 2100

ctagattgaa agaaatttga ctcataaact tccaagttag aacaaatatt tcttcattat 2160

tgttgctttt atgtgagtag catttcccta tcttgcagtt ctgttaacat gaaaatggca 2220

tttttccata atagctttaa aataattttt tagtaattat tacaaaatta aggaaaatct 2280

ctattaccgt tatcttttag catttttttt ttcctcagtg atctcgagat tgtcttagtc 2340

tcaatgagat gtagctacaa aaatggcacc tcttagcagt gatgaggctc aggatatcgg 2400

acatcataac accaatgtca ggataaatat ctcttctaaa gacgatattt accttttaca 2460

aggttagaaa agtctcatac tacctcatct ttattgtggc gcttttgtag atcactgaga 2520

agcttatctt attaaccaat ataccacttc ctaaatatcc atctttggtg aaagaaaata 2580

gtgtggtaag agtacccatg attatagttt tttatcagaa tttgataaga ttttctgttt 2640

ctgtgaaaca attattttaa atatttttct tttaaaaata acttttatc agtacagaaa 2700

aacctaaggg atgactagct tacaaatatt ctgttaaggg gtagttttat aaagaaaaat 2760

gatatatagt tatgttgtct tttatagtgt taaaattagt atttatatga aagtcaagat 2820

ctaagtacct tttcatataa ttcaaactga ttgcttgtga tatgttttct ctggcttttt 2880

tattttttca acttcaaggt attaacagct gttaacactt aaaaagtact gccacatatg 2940

tagccttgaa gtagttgatc taataaatga gagcagggag gagattcatt gactctgaaa 3000

tgatttttat ttttcctttg gtatttgcta cagtgaaaag aagtttggaa agtagataca 3060

taaagacttg agaagggaat tgtttaaggg aaaagaaaag agtaataatt tttttaaaac 3120

attaaggaat tggaattcag aaaggttacc cccttcctct gtgtctttgt aaggatacat 3180

ttggaagaac atacagtatt cagaaactaa cctatataaa atgtaaacaa tatattgatt 3240

gcactatata aatgagtaaa ttttgagagg aacaatgtgg gaatgtataa atttgtctaa 3300

aattttataa ctgttgaaca aagggaagat ttgaacagtg taaattccag agttgagaaa 3360

gcatttagca tggtggaaat gtggagagct tattggtgag agaggatgga gctaagagaa 3420

ataagatcaa atattaaaat taggaattta ggcattacct cagggaaaag ccttgacagt 3480

gaaaagaaac tacttaatcg ctaatagcta gtctggacca gacacttaac tgcgctttgg 3540

gaatcatcct gggctaatca ggaaataaac ttgactttc tatttttctc tgaggcttta 3600

caggacatac tcccactccc attttttct aagcctacag catcttgatt catagtataa 3660

ttcctgaagt atgctgaatg gactttttaa ggttcctta gcatttttgt atagagttat 3720

atgtgatctt tctataacca tgccattcac ttaaataatt catgaaggga atggtttaat 3780

ttaaaggaag acctaatagg aagaagatta aaggaagctt ttagtcagcc tgtggctaga 3840

tttattgatt tggtgatcaa acctgtgcta tttcctgaat ttcagctaat ggccaactgt 3900

ggtcaaagaa tggctttcag ttaaagtttt gacttcttat tataaataat ataaagaatg 3960

tctcagtaat tagaaatccc ttaataagta gaacaaatgt ggcaagtagg actcctatcg 4020

gtatacaaat tccatttctt tttataagaa aaacacataa accattatca tttattcatg 4080

agccaaagcc attaagaaga taaatccagt tatcagcttc ctgtctctga agtttggatc 4140

attttataga tccacgcaat agagagcttc cttcctatga aacaaaaacc ttgagatctc 4200

ttttttttg agacagagtc tcgctgttgt cagcccaggc tggagtgcaa tggcgcaatc 4260

tcggttcact gcaacctctg ccttccaggt tccagcaatt ctcctacctc agctcccaag 4320

tagctgagat gacaggcgtg tgccaccacg cccagctaat ttttgtattt ttagtagcga 4380

tggtgtttca ctacattggc caggctggtc tcgaactcct gacctcaggt gaccacccgc 4440

ctcagcctcc caaagtgctg ggattacagg catgagccac tgtgcccggc caagatctaa 4500

ctcacgctta cttttcatta aaatatttct tgtcgctttt agctattgtc agaatccaat 4560

aaacagctta cgcattcatt ttggtaaagc aaatttcaca ggaaaataga caaaattata 4620

agagattcct ggagacaaca caaggaaaac aatgtttaaa agcaaaatag cctgtgtaat 4680

gttaggtaat gtaatgccca agtgaataaa agattttcg tcaagcaaac tactgtttct 4740

actttggggg aagaaagtca gttttacatt tgtaatttaa ggaaagaaca gaaagcacaa 4800

aggttttct tttctttatt aatggcctac tagaaatgag cagtgcaaga gtctacctgt 4860

actattctaa tacagtaaga tattggacac aaaatggagg taacctttta aaatagattg 4920

gcttggaagt tgaaatgtag attaatggat ataacccaat agaaagggat tttcaaataa 4980

aaccaaagtc tattttttta tttactttct aattttgaac agatgactca gtcctaaatc 5040

tttgccttta tttcctataa aatgtaggtg atacttgtaa ctcgacttcc tggagttaat 5100

tcttcagcaa gaggtgaccc tgggagcgta ctttaaaata attgctgtac agccattgag　5160

tactaacatg atgataggtt ttcaaaatat ctttgtagtg gatgctgcat aattacattc　5220

acttctctta gactgtaaaa gactttcttg acttgtttta acagtagaga tagcagtaca　5280

atttgaattt atggtttagg ctctgcaatt agaggaacaa ttgcagtttc ctcctaccct　5340

tcatatggtc tgtgtaaaac tgatgtttgc ttaacttatt ttaaaagttg attacgtttt　5400

cagaaaataa agataatcac ttttgccatg gttataatca aatctaagct ttcagacttg　5460

agagccatgg tgtaaaactc aaggaggttt atttaaatta tgctgacttt gctagaattg　5520

gataaattct gtataagcca agtatgagtt cacatgtact cgaatataca gttttcacaa　5580

agctattact ctcatcagtc aggcttgtat gatctattcc ttaccacaaa agaagtagac　5640

aattgccact tttatttcta atccttaagt tgaatgtttc ttcttggatg taagttcaaa　5700

taaattgatc tggataaatt ttcatttcta cttaattaaa acttcctatg taaaatcc　5758

<210> 659

<211> 3450

<212> DNA

<213> Homo sapiens

<400> 659

aaagggaatt ccagccgagg tccggggcca gtaggtcagg gctgacttct cttaaaaacc　60

ctattttctt gttattaaaa taaatcattg tagaaaataa aatacagatg aatgaaaaaa　120

ataacataac agtagttaat tatacctgta gtcccatcac ctgagaaaac cccaaatcac　180

attttggtg tatatccccc aatttatttt ccatgcctat acacactaca tgatattttc　240

taaatggaag cagactccat catttcaccc tggcaggcgg gtatctggca cacagcctgg　300

ccatcatgac cgatgcagcc cacttgctgg cggatgtggg cagcatgatg ggcagcctct　360

tctccctctg gctctccacc cgtccagcca cccgcaccat gacctttggc tggcaccgtt　420

caggtaaggc ccctgcatgg cccagtgact ctccaatctt gccagagggc acccgtcagg　480

gtcccaagca ggtctctgac agcttgtctc cccccccacc cgcagagact ctgggggctt　540

tggcctctgt ggtctccctc tggatggtca ctggcatcct cctgtacctg gccttcgtcc　600

gcctgctgca cagcgactac cacatcgagg ggggtgccat gctgctgacc gccagcatcg　660

cagtctgtgc caacctgttg tacgtcccag tatggagcag gcaccttgtg gggcccaggg　720

cgaggggtct tcctccagga tgggagagct ggctctctcc tccccaccag acacacagac　780

acgcacacac agctctccat gggctgccct gcgtgtgcct gagaagggtc tgggatagag　840

acctaaaatt cagtcagcag atctctgtca agggcctgcc atgggccagc cactctgatg　900

agggctttca tcaacatgat tgcatttaaa cctcacagcc accccatgag gtaggtagca　960

ttacccctag tttaccatta atgcagtcaa tcccaacagg tgacttgccc aagtcacata　1020

tctatttaag taacagggcc agcttccgaa tccacatgtg tggcaccaag tctggtattc　1080

tttcccccag gctgcattgt ttatctctct tgcaaaatgc tgttttcttc caggggctgg　1140

gaaagggcta ctggggaggt gagacatgga gatgggggta taggaggcca ggagcagggc　1200

cctaggctga ggtgctctgc ttacccctca gaatggcctt tgtgctgcac caggctgggc　1260

cccccacag ccacgggtct aggggagcag agtatgcacc gctggaggag gggcctgaag　1320

agcccctgcc cctggggaac accagcgtcc gggcggcatt tgtgcacgtg ctgggggacc　1380

tcctgcagag ctttgggtta ctggctgcct ccatcctcat ctacttcaag cctcaataca　1440

aggcagccga ccccatcagc accttcctct tctccatctg tgcccttgga tccaccgctc　1500

ccaccctccg agacgttctt cgaatcctca tggaaggtac ccccgcaat gtggggttcg　1560

aacctgtgcg ggatacgctg ttgtcggtgc caggagtccg ggcaacccat gagctgcacc　1620

tgtgggccct tacgctcact taccatgttg cctctgcaca cctggccatc gactccaccg　1680

ctgaccctga agccgtcctg gctgaagcct catcccggct ctactcccgg tttggattct　1740

ccagctgcac cctgcaggtc gagcagtatc agccggagat ggcccagtgc ctgcgctgcc　1800

aggaaccccc ccaagcctga gccatggccc tgccctcacc ccactgccag gccgaggctc　1860

agccccagac tctcagcatc tgctgccctg atcacagaga cgggaccgag ccaggtccat　1920

acccctcct ctctccctcc taccacctgc cagtttcccc agcctcagcc ccagccccag　1980

ccccagtggg caagaccaaa gtgtggcggg gagtggggtg ggagtcaggg gaatagatgt　2040

gactagttca ggggcgggga ctcccaggcc tcagtgtggc agggtgtgtt gaaggcctgt　2100

ggtgccatct ccccatggtt catgtggagc cacgaacatc ctttccctgc agtccatttg　2160

tctgtgtggc aggctggctg gctgggggca tctgcctgtc tatgtgctgt tggtgtgcct　2220

atgcctgggg gaggtcagta ggggcccccct ccccacatgg ccctcgctct gtctatgcag　2280

gggccccaaa gcccgcactt tgtccgtgtg tcttagccct gtggttttgt ctgtgtgtgt　2340

gtgtgtgtgt gtgtgtgtgt gtgtgtgtgt gtgttcttgg tgctgtggcc tgtgtgtctc 2400

tgtgcctatg tggctgtgct atggtttcta tgagtctgct ccatccatgt gtctgtttgg 2460

gggtctatct ctccatccct ctgttggtgc tgtgcccttg gctatccctg aaagagggag 2520

gactccgctg cagctccacc aataaacttg tgtctcactg catctttcag cctgtgtgct 2580

gactcctcag gaggggaag tcaaataggt cacttgagaa caacagaatc cctcctgtcc 2640

cttcccagcc tctggagtga cctcccacag acctcctgtc ccttcccagc ccctccaccc 2700

tcagatggag ggtaaaagcc accagtctct ttactcccct tcccctggct cacagcatgc 2760

ctgggtcctt ggctcaggga cagtcccatg tgccctgggc ttggttgcag gagaatgctg 2820

gaaggtaagg agccaaggaa tccctgggag tcagtcgttc tcagaggtcc ctgcatgcca 2880

gtgggcctca ggctggctgg agggaggctg ggtccctttg agggagaatg gctagaccat 2940

agcactgatg tgggcttggt tctcaggcca tctaaggtgt ccagcggtag ggacccctca 3000

accctgatag cagccaaccc tgagtccagg tttaggctgt gaacaccaag gacctctttt 3060

acacctattc cccctttgtc ttaagaactg catattttga cacattaagt cttaaaatca 3120

ggctcattaa gggattgttg attttctctt taaaaaaaat caaactcaag ctggacatag 3180

tggcctgtgc ctgtaatctc agccctttgg aggctgaggc aggaggattg tttgagccca 3240

ggagttcaag accagcctgg gcaacctagg gaaacccctg tctctacaaa taatttaaaa 3300

attagctggg tgtggtggtg catacctgta gtcccagcta ttcaggaggc tgaggcagga 3360

ggattgcctg agcccaggag gtcaaggcag cagtcagcca tgatcatgcc actgcacttc 3420

agcctgggca acagagcaag accttgtctc 3450

<210> 660

<211> 5233

<212> DNA

<213> Homo sapiens

<400> 660

ctcaggagca caggcaccca caacctgtca ctgggccatg caccccaggg cccaggcaga 60

gctgccacct cgctgtctcc aagccgacct tgcctggcgc tagctctgga gcctgctgca 120

```
gtccccatcc tgtcctacct gcccagtgtg cgcccattcc acatactgct cttgttggca    180

gggtgggctg tggtcctgct gggagggacc tgggagcttc aaggcaggct agggcaggct    240

gaatctagag gagggaaggg agggaggaag caaggtataa gaaaaaaact gcttctctct    300

actctcacac cactcacctc tggtcaccaa ataaagtggg gatgtttctc cccaccaaca    360

aaatctataa atggaaaggt tttccctgag ttctacgagc gatccttgca aattagttaa    420

acccgaggag ggaaacacgg ttactggttt attatacagg atcttatcaa ggataggag    480

gaacagccag gtgaggagag gcacagggca gggcatgtgg gaaagggtgg gcacctctct    540

gccgtctctg gggcactgcc cttcaggggc ctctgcatgg tccaccctcc agaagctcca    600

aaccctaacc ttttcggttt ctatggaggc ttcgttatga agggcatgat cgattacatc    660

actggctgtt ggtgattaac tcaaccttca gcctctccgc ccttgtaggt cagtgtgtgg    720

gactgaaagt tccaaccctt taatcacagg gttggttccc ctggcaacca gccccatcct    780

gaagctatcc aggagctcaa gagtcacctc gttccagcaa aggatgctcc tatcacccag    840

gaaatcccag gggctttagg atctctgcat cagatgctgc tgtcactcag aaaggtacaa    900

aggtcttagg agctctgcct caggaaccag ggggcagagt ccaaatatgt atttccgacc    960

atatcacaat atcacacaag gtagtcctgg cccagagcct gccaagtgcc aggcaatagg   1020

acacacattc tctcgtgcag tccttcccac aaactcggga gacaggtata actctcccca   1080

ttttactaaa tgaggaactg agctcagaag ttctgtgctt tacgccaagt ctcagcactg   1140

gcccatggtg gagctgggcc catacccttc ccctggtctt gctggtccct gagcagctgc   1200

ctgcagccct ccggggacaa ggggtctctg gaagagggtg gccgcagtct ggcagtctac   1260

ctttctgtct gaggggggctt ggttcctgat tttcttctct tctttgcttg gcttgtctaa   1320

ctcgcaggtt tttgggggctt ttgggtaatg attgggtctg agtaccacgt ttaccccatg   1380

cccctgctga gtgaagctgt gaatgcccca gggctggggg gcaggagacc agagtacagt   1440

ctggaatctt gaatttattt gctaagcggc ctcagataga ccgttccctt ctctgggatt   1500

catgtacata tctgtgcaat gggaggctca ggaactttgg aaggccttgc accccacggt   1560

gaatgtaaca gtcccatggc ccacccagga ctaaaaggct tttggttttt aatctttttt   1620

ttcctcgaat ttttttattg tgttaaaaca tacatgacgt aaaatttacc accttaactt   1680

tttttttttt tttttttttt ttgagacagt gttttactct tgttgctcag gctggagtac   1740

aatggtacga tctcagctca ctgcaacctc tgcctcccag gttcaagtga ttctccagcc   1800

tcagcctccc aagtagctga gattacaggc atgcaccacc atgcctggct aattttgtgt   1860
```

ttttagtaga gacgtggttt ctctatgttg gtcaggctgg tcttgaactc cggacctcag 1920

gtgatccacc catctcggcc tcccaaagta ctgggattac aggcgtgagc caccacaccc 1980

ggccagcctt aaccattttt taagggtacg gtttagtggt attaaataca tccttcgtgt 2040

gcaaccctca ccatcctccc actccagaac tcttagttgt tgtaaaactg gaactctgta 2100

cccactaaac aacagcaacc actgttctac tgcctgtctc tacgattttg actactctag 2160

gtaccacata taagtggaat cctagagtac ttgtgttttt gcggccacag ggttttattt 2220

atttcttttt ctccacctcc agaatccccg cgttctgctc ctggctggtt ttgcttctcc 2280

tgggtcgtgg ggtgctattt gcatgtgggt gaggagccct ctccccatcc atcctgcttg 2340

tgttttcctc ctgggtgcta actggcctct acctttgtct ctgtctcctc tgcctctgct 2400

cttggttagc tgacggtagg gaaagtgtcc agcggaatag gggctgcagc tgaagtcctg 2460

gtcaatctgt acatgaatga tcacagacct aaggcccagg ccacctctcc agacctggta 2520

aggacatgca cccccagcct tcacccacag acactggctc tggcatccca gggcgggcac 2580

atgggatgtc gagaggatgc cctggccctc ccgaggctcc tcttctcttg gagcaagagg 2640

gggctgagaa tgagctgaat cagggcagaa gttaaaagga gcctgctttt ccttaaagac 2700

agatctcact caggtcccct gtggtctttt tgaaaataga gatcttcctg ctctctgtgg 2760

ctttggagaa cggcctggta gaaaggccca ggtgaggccg tgagcataat tgaatggccc 2820

tcactttcag tgtttagtgt ccaacctgaa cagactctgt gcattggatt gagaaaaagg 2880

tcatggggaa aatagccctt tgattcgaat tctccctttc tctaaactgg gctgctcgct 2940

gccatcacca ggaattttgg ttgaccattc tttctgtttc cttttggccc attgccctgg 3000

aatcgcccag gggtactgct gccctggccc gtgccctccc aattcacaac taggactata 3060

actgaccaga tttgatgcca caagctttcc tcacccaacc tgtgccactg caggggaaca 3120

ggacacctaa aacatcctca gcgggccagt ttcaggacct ttgtccagaa ccaggtgaca 3180

cttaatccca aggacagatc ctggaaagaa tatcctgggg tggacagggt tgtgagtaaa 3240

gcccactccg tcagaccagg atcactccca ccccaaaacc agagcagcca acctcggggga 3300

gagcccctcc cgggcccacc ttgttgtctc gggcctgtct gggagtacag ttaacagaag 3360

cccctgcagg gttggggtct gggttggggg tgtatcttcc tacccctccc tctttgctgc 3420

agtggcagta gcaggaagca gaagcccacg aggtccccag cattcagtgt ggaatttcta 3480

aaagccttgg cctggcattt gaaggctcgg gataagccat aatacaccca ctcttctctc 3540

ccgatcccca ggaatctatg cgaaagtcat ttccccttaa cctgggaggc agcgacacgt 3600

出証特２００４－３０５９６６１

```
gttacttctg taagaaacgt gtgtacgtga tggaacggct gagcgccgag ggccacttct  3660

tccaccggga gtgtttccgc tgcagcatct gtgccaccac cttgcgcctg gccgcctaca  3720

cctttgactg cgatgaaggc aaattttact gcaagcctca cttcattcac tgtaaaacca  3780

atagcaaaca acggaagaga cgggcagagt tgaagcaaca aagagaggag gaggcaacat  3840

ggcaagagca ggaagcccct cggagagaca ctcccaccga aagttcttgc gcagtggccg  3900

ccattggcac cctggaaggc agcccccag ttcatttcag ccttccagtg ctacacccac  3960

ttcttggctg acacacttct gctctaaggt gactggtttt cttgccaatt ttcaaagagt  4020

ggtactaacc cccaacccgc tttccgcacc ccgtcctctc cgccagcagt actggttgca  4080

ctaactgtga gtgtcttgca tactgatgga ctcatttggt ggcatggttg gctaacagca  4140

tggcgggggg tgttcagctt gagacccatg cctgtgttca tttcccatgg agctggcagc  4200

ctggtctacc ccaagtgcat gccccgcctc tcctctctcc cttgggtctg cctgcgtgca  4260

tgcttctcca gttgcgtctg cgaagctacc tactttcttg ggagggtcga ccttgatcat  4320

gaaacaatac catgaggggg cctctgtcac ctttgaaaag aacacttttt gagcagcctc  4380

aaaaagctca tacataccag caccttctta aattggctct aatgtaaaga ttgttaatgt  4440

catttatcaa aaccataggt gattatttgg agggatttaa aaaacttaat tactctcagg  4500

cctcatccca agcttgacac atgctctgta ggttgaacac ataatcacaa atattctagc  4560

aaatgctgcc ttggttgcag cctgcactgt agacccaagg gttttgctgt ggctcttctt  4620

atctcccttg gctcataaag cccctgatga tgccagagct tcaattagag ccatcatcat  4680

cccaggcagg gatatctttg agaaatgact cagttcagcc ccaggcccct gtgactctgc  4740

ttaaagcaca catttctgct gactcttgta cctggggcag caggataatc accaacacac  4800

tcttaacgag aaacaacaca ccaagcacag tggagctgtc ctaggcaaca ctcgcggtct  4860

caggctgcgg tgggcgtctg tcctgcatgt ggcccagacc accctgaccc ccgggcctgc  4920

ctgcctggcc ctgcatgctg cacgctcact gtatttgtgc agatcctggc cagtacaaag  4980

tcgttgctct tgtcttatct tctcttacag agtctccctc cctttataga atgtcaacca  5040

aagagtgccc tcctcccctc tcagcctcct ctttagctag cctccccatc tcatcacaac  5100

gcatgtctgt gacctttggt aatcatttac agtgccacac ggaaccctgt attttgcaca  5160

cagcaaaaca aacaatgttt agctttattt atggtatttg atgctgtaaa tggaaataaa  5220

tattgttctt tat                                                        5233
```

<210> 661

<211> 3901

<212> DNA

<213> Homo sapiens

<400> 661

tcagtctcgc cggcggcccc cgctcccgga tccccagcgc cctggccaag aagcttcctc   60

ggctccccct cttccctctc cctgacacgg ttgtgcagag ggcgcggtgg ctcagataca   120

ggatttcgac atattggccg gtttgctctc gagctcctgg gctcaagcga tctgcccgct   180

ttagcctccc aaagtgatgg gattacaggc gtgagccacc gtgcctggcc ataattttta   240

aaaatgtcta gtcagatggc gagtaaccca tgggccaggt agcgttctat gccaaccttg   300

aatgccatca ggaagtcact ggacagcaaa ctcttccaag atcataacat ggctgttgga   360

gcaacctgga aaagaagaaa aaaagaaaaa ccatggcaaa agtaaataga gctcggtcta   420

cctcccctcc agatggaggc tggggctgga tgattgtggc tggctgtttc cttgttacca   480

tctgcacacg ggcagtcaca agatgtatct caattttttt tgtggagttc cagacatact   540

tcactcagga ttacgcacaa acggcatgga tccattccat tgtagattgt gtgaccatgc   600

tctgtgctcc acttgggagt gttgtcagta accatttatc ctgtcaagtg ggaatcatgc   660

tgggtggctt gcttgcatct actggactca tcctgagctc atttgccacg agtctgaagc   720

atctctacct cactctggga gttcttacag gtcttggatt tgcactttgt tactctccag   780

ctattgccat ggttggcaag tacttcagca gacggaaagc ccttgcttat ggtatcgcca   840

tgtcaggaag tggcattggc accttcatcc tggctcctgt ggttcagctc cttattgaac   900

agttttcctg gcggggagcc ttactcattc ttggggggctt tgtcttgaat ctctgtgtat   960

gtggtgcctt gatgaggcca attactctta aagaggacca cacaactcca gagcagaacc   1020

atgtgtgtag aactcagaaa gaagacatta gcgggtgtc tccctattca tctttgacca   1080

aagaatgggc acagacttgc ctctgttgct gtttgcagca agagtacagt tttttactca   1140

tgtcagactt tgttgtgtta gccgtctccg ttctgtttat ggcttatggc tgcagccctc   1200

tctttgtgta cttggtgcct tatgctttga gtgttggagt gagtcatcag caagctgctt   1260

ttcttatgtc catacttgga gtgattgaca ttattggcaa taccacattt ggatggctga   1320

```
ccgacagaag gtgtctgaag aattaccagt atgtttgcta cctctttgcc gtgggaatgg  1380

atgggctctg ctatctctgc ctcccaatgc ttcaaagtct ccctctgctc gtgcctttct  1440

cttgtacctt tggctacttt gatggtgcct atgtgacttt gatcccagta gtgaccacag  1500

agatagtggg gaccacctct ttgtcatcag cgcttggtgt ggtatacttc cttcacgcag  1560

tgccatactt ggtgagccca cccatcgcag gacggctggt agataccacc ggcagctaca  1620

ctgcagcatt cctcctctgt ggattttcaa tgatatttag ttctgtgttg cttggctttg  1680

ctagacttat aaagagaatg agaaaaaccc agttgcagtt cattgccaaa gaatctgatc  1740

ctaagctgca gctatggacc aatggatcag tggcttattc tgtggcaaga gaattagatc  1800

agaaacatgg ggagcctgtg gctacagcag tgcctggcta cagcctcaca tgaccaaagg  1860

ccttgagccc cagaatcttc aggtttgaga gaggtggggc caccagattc ttcatgtttc  1920

tgaaactttt tattttggca gaaggattgc cttccaagga aattattatt attgttttgt  1980

taacatatta atatttataa gggaaaacag cacataataa ggaaagctgg actagcccag  2040

agccttctca tttgggattt gtgctcataa ctgaactcgt atcttttggt caatgggcat  2100

agctctgtaa gaaatgtaag gacacagctg atataattag ctgtaattag ggataatttc  2160

aaagcataac caaagcagat gacactgggc agcagctttg ttccagtctc aggcccttca  2220

tgttccctcc tcagaaagaa aatggaaaca ttaacgtgta gctttgctta ccttgttctg  2280

gttagagaag ggaggtcagc ttgggtgtgg tggtgaagag tgaagatgcc atactttttc  2340

atggtggagt ttctcattag ggttttactt gggattgtta aagaatactt gagattcttc  2400

aaaaagtggt gattaatata gaaagaaact cttatttttt ttttctctta gtcttccagc  2460

cagcccttgc ctctgcccaa gggtagacac cactatgaga atccaaataa tcatggaatg  2520

ccatggttgg aatagatctt aaagggcatc tggtaagatc catttgaaat tgtccactgg  2580

aaaccgaaag ctcttttcct aagactgggt tccaggctct cacatttgtt accatcacat  2640

ataatactta ctctaaattt agcagaacac acttagtcac aaggacaacc tctcaatctt  2700

acctgaaatg tcaacaacac caaaacttcc cgtcttttac cttcagagaa gaagctctta  2760

cttagactgc agacgcattc ctgttaggtt ggaaaaatgt tggcagtatt ccaattgggc  2820

aggaactgaa ttcttgaatc agcaggtctc tggtgagagt tttctttgca gatcagacat  2880

ttagttttat cattacccaa aagaggattg gagggagtca gttgtctgaa aaatattatc  2940

ctagagatat tctaaaggtg agattccttt ctccctgtgt taattcttgt tccactatcc  3000

actgctcttc atctctttat agataataat tagaaatcta ctcattggat tataagttta  3060
```

ttcattctca aatactccac ttttctatgg tttgggataa tttctgagtc ttcagattga 3120

agagggaagg catggaggga agaaaaagtc cagatccccc agcttgtttc caaccatttt 3180

aagtccaaag aattataatc ctgaatctca cagtgtgtca cacctgtaat aggagtaaat 3240

tatgcaatca attttaatta ccaggagttt aaaatccaaa tgtcaaggaa ctgttttgac 3300

cctgaaggct atttaatcca ctgtccccta caaggcctca caagtgctgg gggaaaaaaa 3360

acagcaatga ggatgatcct gagttaatgt gtatgctccg caagagagct tgcctatacc 3420

ttgattattt cataaaatca catgttaata cattgctttc agaatgaaat actgacttga 3480

tctgatagga gaaaatggta atatttcata gttgttttcc aaagacaaat ttaaatgttg 3540

tctgttatct ccttacttag tttaagaatt tagtttgaa ccccattgac tttgtcattt 3600

gcaattttaa aaatatttgg gactgggcat ggtcgctcac gcctgtaatc ccagcacttt 3660

gggaggctga ggcgggtgga tcatgaggtc aggagatcaa gaccatcctg ctaacatcg 3720

tgaaactccg tctctactaa aaatgcagaa aattagccag gcgtggtggc gggcgcctgt 3780

agtcccagct actcatgagg ctgaggccgg acaatcgctt ggacccagga ggtggaggtt 3840

gcagtgagcc aaaatcgtgc cactgcactc caccctgggc gacagagcaa gactccatct 3900

c 3901

<210> 662

<211> 4289

<212> DNA

<213> Homo sapiens

<400> 662

attcaataga tgcgcccagc attcagattg ccttttctct caaccaggat ctttaaagtc 60

gatgacaaga gttccagtcc tgaatcatgg caaagtgcag tagtgaactg cggggttatt 120

ctggaaggat ctctctatgg ctgatggtct cagttccggc atcagcctct gactgagaat 180

caggtctcac acaggaggag tcagatgagg agcaatcctc tgcttccgat ggagttagtt 240

gtgatgaatt ggtgaggtct ggttttcac actgaactaa aatgagcttt cgctgtgtca 300

agcacaagac tgaccccaga gacacacata gtgcacctca tagaagcttt taatagtctt 360

tatatttact aaagaatagg actaactatg gaactatgaa gatgagctgg aaatgacagg　420

tgacttgcca gcaggccaga gtgtgacttt tttttgtccc tcaatgggag gtgtcaattc　480

tcccttcggt tgtgagaatc agttggttca tttgtgggaa ggttgcaggg gggatctttg　540

aatcacagcc ttcagatgcc agaagggcag agggaatccc acacgggctg gtggatcatg　600

tgtgtgcatt tctctccctt ctaatctgag gaaactaagc gtgaaagaat gtgagcatgc　660

agaaaaggag aggcaggtat cagaggcaga ggaaaatggg aaattggata tgaaagaaat　720

acacacctac aagtgagttc agaaactgaa ccccacccte ctgggaaacg cccattggag　780

tgttgttttt aacctttgta cagtatttag acccagtaaa tgcagaaata gaaacaaacg　840

gtcagaagac atatcgtgag agagagcgag agagagttca caaaacagaa aacaaagtac　900

cttaatattt accagtgacc aaaagatgtg aagtagcaaa acgtctcctg accccattgc　960

cagctagact gtgtggaaac tcggttcata ccagccattc tagggggtggg gtgagttgtt　1020

gtcatcctta ggaaagtgtg ttgttgtagg atcaaccaca tccttcaaaa ggactatgcc　1080

tgtttataag cccagctgtt tctgccctgt gaaacacggt aaggatatta atacaaagag　1140

aatacagctt tatgataaaa gatgctcaat gaaggatgaa ttagggatgt actgagaatg　1200

gggaaggaaa ctatcatctc agaagtcagc aggcagtaag caagaggagg aatcaataca　1260

gcaacagttt ggatcagact gtacagtttt tttgtttttg tttttctgag atggagtctc　1320

gctgtgtcac ccaggctgga gtgcaatgac gtgatcttgg ctcactgcaa cctccgcctc　1380

ccaggttcaa gtgattcccc tgcctcagcc tcccgagtag ctgggattac aggtgcctgc　1440

caccacgcct ggctaatttt ttgtattttt agtagagaag gggtttcacc atattagcca　1500

caatggtctc aatctcctga cctcgtgatc catctgcccc gccctcccag agtgctggga　1560

ttacaggcgt cagccaccgt gaccggctca gactgtactc ttatagccat ctggaatacg　1620

ttttctaggt agagatagat tgtgtaaggg tacagttgtg aggataacag aaacatggca　1680

gattatttaa aatcatcctg aaagtggtgc tttatctgat gaaagtgatt gtaatccata　1740

ggaaaatgtt tcaacgtgcg caagagttgc ggcggcgggc agaggactac cacaaatgca　1800

aaatcccccc ttctgcaaga aaggctcttt gcaactgggt cagaatggcg gcagcggagc　1860

atcgtcattc ttcaggattg ccctactggc cctacctcac agctgaaact ttaaaaaaca　1920

ggatgggcca ccagccacct cctccaactc aacaacattc tataactgat aactccctga　1980

gcctcaagac acctcccgag tgtgtgctca ctcccccttcc accctcagcg gatgataatc　2040

tcaagacacc tcccgagtgt gtgctcactc cccttccacc ctcagcggat gataatctca　2100

agacacctcc tgagtgtctg ctcactcccc ttccaccctc agcggatgat aatctcaaga 2160

cacctcccga gtgtctgctc actccccttc caccctcagc ggatgataat ctcaagacac 2220

ctcccgagtg tctgctcact ccccttccac cctcagctcc accctcagct ccaccctcag 2280

cggatgataa tctcaagaca cgtgccgagt gtctgctcca tccccttcca ccctcagcgg 2340

atgataatct caagacacct tccgagcgtc agctcactcc ccttccaccc tcagctccac 2400

cctcagcaga tgataatatc aagacacctg ccgagcgtct gcgggggccg cttccaccct 2460

cagcggatga atctcaag acaccttccg agcgtcagct cactcccctt ccaccctcag 2520

ctccaccctc agcagatgat aatatcaaga cacctgccga gcgtctgcgg gggccgcttc 2580

caccctcagc ggatgataat ctcaagacac cttccgagcg tcagctcact cccccctccac 2640

cctcagctcc accctcagca gatgataata tcaagacacc tgccgagcgt ctgcgggggc 2700

cgcttccacc ctcagcggat gataatctca agacaccttc cgagcgtcag ctcactcccc 2760

ttccaccctc agcagatgat aatatcaaga cacctgcctt ccaccctcag cggatgataa 2820

tctcaagaca ccttccgagc gtcagctcac tccccttcca ccctcagctc cactctcagc 2880

agatgataat atcaagatac ctgctgagcg tctgcggatt ccgcttccac catcagccga 2940

tgataatctc aagacacctt ccgagcgtca gctcactccc cttccaccct cagctccacc 3000

ctcagcagat gataatatca agacacctgc cgagcgtctg cggggggccgc ttccaccctc 3060

agcggatgat aatctcaaga caccttccga gcgtcagctc actccccttc caccctcagc 3120

tccaccctca gcagatgata atatcaagac acctgccgag cgtctgcggg ggccgcttcc 3180

accctcagcg gatgataatc tcaagacacc ttccgagcgt cagctcactc ccttccacc 3240

ctcagctcca ccctcagcag atgataatat caagacacct gccgagcgtc tgcgggggcc 3300

gcttccaccc tcagcggatg ataatctcaa gacaccttcc gagcgtcagc tcactcccct 3360

tccaccctca gctccaccct cagcagatga taatatcaag acacctgccg agcgtctgcg 3420

gggagcgtct gcgggggccg cttccaccct cagcggatga taatctcaag acaccttccg 3480

agcgtcagct cactccccctt ccaccctcag ctccaccctc agcagatgat aatatcaaga 3540

cacctgccga gcgtctgcgg gggccgcttc caccctcagc ggatgataat ctcaagacac 3600

cttccgagcg tcagctcact ccccttccac cctcagctcc accctcagca gatgataata 3660

tcaagacacc tgccgagcgt ctgcgggggc cgcttccacc ctcagcggat gataatctca 3720

agacgccttc tgagcgtcag ctcactcccc ttccaccctc agctccaccc tcagcagatg 3780

ataatatcaa gacacctgcc gagcgtctgc ggggggccgct tccaccctca gccgatgata 3840

atctcaagac acctccctta gctactcagg aggctgaggc agaaaaacca cgcaaaccca 3900

agaggcagag ggcggctgag atggaaccac ctcccgaacc caagaggcgg agggtcggtg 3960

acgtggaacc gtcacgcaaa cccaagaggc ggagggccgc tgacgtggaa ccatcatcac 4020

ccgaacccaa gaggcggagg gtcggtgatg tggaaccgtc acgcaaaccc aagaggcgga 4080

gggccgctga cgtggaacca tcatcacccg aacccaagag gcggagggtc ggtgacgtgg 4140

aaccgtcacg caaacccaag aggcggaggg ccgctgacgt ggaaccatca ttacccgaac 4200

ccaagaggcg gaggttgagc tgagaagagg ccagtgcact caagcctgag caataagaat 4260

aaaaccgagt agaacaaaat aaaaaattc 4289

<210> 663

<211> 4726

<212> DNA

<213> Homo sapiens

<400> 663

caactaggtg ttaaaacaat tccagatgat acaccaatgt gccgtatact ccttcgcaaa 60

gaagttctaa gattagtcat taatttgagt agttcagttt caactaaatg tcatgagact 120

gggcttttaa caattaagga gaagtatcct caaacatttg atgacatatg cctttactct 180

gaggtttccc atttgctgtc acactgcaca ttcagacttc cgtgtcggag gttcatacaa 240

gaattatttc aagatgtaca gtttctacaa atgcatgaag aagcagaggc tgtgttggca 300

ataccaccaa agcaacctat agttgataca tctactgaat cctgacctca tatttatgat 360

ggatatagat acatactata tatattcata tttgtggatt tcctaaaagc ctcagaaaat 420

acgactgact aggcagcaaa gacaggagta tcttctgtac actgttccgc agttactggt 480

acatgaacag ttggaactgc tgactttcct aaccaaaaca acttccttct ctcctttgtt 540

gagccttttg aggggttcat gattcattac cacagtttta agagtttcag ttaccattgt 600

atgcaagagc caagcactga atacctacat aggttttcta ttttctttca ttttaaaagc 660

ataatgacag tggaacaata atgggatatg cagaagcacc cttcacaagt tatttctgaa 720

tgattttttag ggtaaataat acagatgcct tgtttgttaa ctaacttgtg gaaagcagga 780

```
atcagtgtct ctaaggctgc atcctattac cacaatgggg tgtgctataa ctgctggtat   840

tagagaggga actttggccc tttcacgttt ttcttaatgt ttgtaacact acttcagagg   900

tttataacct caaagcagaa gaagagcctc aacaacccgg gacttataag ttatttttat   960

gttactagac ttgcataaag attcttgttt tccaactctt cattttgttg caatgtgtta  1020

ttacaggata tatgaaccaa ttaaggtttt tcactacagt tcttgaataa aatttaaaaa  1080

tcattttta ttttaattaa aaatatttcc catttataga atgcatatat ttgcaatgga  1140

cttccacttt catcaacttt ccatctcatc gctttaaaca ggaacttgaa caagcactgt  1200

tagtttagac ctaaaggata ggaaagcatt aaataatact ttggatctcc tgaggagaag  1260

ataagtttgc ttgcaattta cacattccat ggggaaagaa gagccatatt tccttaaaaa  1320

aaacattaat aaagcttgtt attgagaaaa attgtagtga aaagccttaa gtaccaaatt  1380

ttaaagcagc agtaacttaa tttttatatc agtgtttttg ttttgcacaa actaaatgca  1440

gtggtaggtg ggtttatgag tatattaatt gcctttatcc atttgtgaag ttaagttgat  1500

gagggcaagg tttttgtttg tttaatttgt atatgtctaa aggtatttgg aactttttac  1560

aggaattaaa catatatgca aatttgtata taaaaatagc atggccatca tttgaatgct  1620

tgtaaatgaa aggattatct tttttgagat ctatatataa atagaaatag aaaatccagc  1680

tggactgatt aggattcttt tttaattcat ttgtgtataa catttttatt acaattacac  1740

atcagttttg acacagtcat agcaacatta atattttccc atgatgcaga tccttttgt  1800

aatgggcttg ttctttgaga tctctgtaaa gaaccctgtg aactagaaaa cataactcac  1860

agagatactt ttttaaaaaa tttatttact ggcactgaaa gttccagttg ggatgaagca  1920

tttcatctca cttcataaca cctctttgac tgcacttcag tgaattgttc ttatgtgcac  1980

tgtgtagcaa cttacattat aacaaagcag ataagggctg taagctgctg cttatgttga  2040

aaagtggttc ttcagatttt ctctcataaa atccagttga agataaataa tttttttata  2100

ctttatcact gaacccaagt gtttatttaa atgtcaacag tacttctaag aacgttgcct  2160

gtcatcgtgg tctttggtct tggataacta aactgccttt ccagagaacc aaatgtcaga  2220

gttactagac caaatagtgg ttaaaacctc caaaggaagt aatgtaatct tattcataat  2280

gggattaaca tattttagac attcatttta aacactacct cagttaatat agagtataaa  2340

aatctgtggt ttaatccctc aaaagttaac agtaattttt tttttgtctt acacacacac  2400

acacccctc ccccaccatc actatccctg taccctcacc ttggtcatct atcctgaaat  2460

aaggcttagt tagtattggc ctgaatgttt tgtgtttttt tttttttttt ttttttttac  2520
```

tgttactttg aaaaatatgt atgtatacct tatcatatct gcctatacac ttactttggg 2580

gagatactca gagctttgtg gttatcagta tactaaaaaa aaaaaaaaag tctacgctta 2640

aatttatagt gctatttggt ttctccatga tttcactgac aggtctaata cattttcttt 2700

gagtacttgt ttgtaaaaag tagactttat ggtgaaaaat acatgcagtg ccaagtgatt 2760

aacttaagtg tttaaaaata ttaaattata gcagaagagg ttaggaatga tatcagcagt 2820

aatagaaata attgagaaaa tcatctataa ataatagata ttacagacta tagaatacca 2880

aaataatgtc aatactgtag tttttaaaga ttttaggatt aatcttagtc catataaatt 2940

tgtactattg gtaattattg aataattggg aggaatctgg gcagttgtgc tggttgtaaa 3000

ctatgaattt ctaattgtaa agtgaattgt tatttctaat tgaacttttt ttcaagaaca 3060

gatttcagcc tcacatacta agtaaatact gataaataag gaaattagaa atttagtatt 3120

cataattaaa tatgctctaa aatttcttat acttttattt cctgtttatt cttaggtaga 3180

ttggaagggg gaaacagtct gttctcccta attaaatttt ttctaataac gattagtaga 3240

atatggacat tctatatgac agtgacatta aaagaggctc tttggaagta tatacattat 3300

taacataatg tgtacaagtc cttttgaaat gacaacttta atgggtttca gctcttttat 3360

ctagagcttg agataattca agctgagttt ttcagggcat atcacaacgg caaagtgttc 3420

agcagtggga tatcaatgct tatttacatt ttcctactgc tatttatata aaatgttatt 3480

ccattcagag gatgcctttt atccccacat taaagcacag atcattaagc aataaaaacc 3540

aaattgtctg tcattcaaat tataactgca gttatttttg catggtaaga gtgaggtgct 3600

aattttgtgt gagatgaact ttgtaaacta ctttgggaaa tgttctttgg aagtaaggtt 3660

ttttctcctt tagtcttatg cttccacttt tgtctcagat tcacaatcca ttaaaacatg 3720

gggaaaaaag aaaaggtaaa attgagagac ttttgttaga ggagctattt ggaatgaacc 3780

aacatttcag attttccaaa atgtaagtta ggaagtctcc attgtctctg cattaacaaa 3840

atacactgtt actatcttaa tctcaagagt gtcattacag tgagaatctc atttaaaagc 3900

ataccagtga aattaatagc agtgcttatc aaagaacact gaaatctgtg agaatctttc 3960

taggagcatt cttttcttct tttagttcca agttccaggg tatttttcat tcctagtagg 4020

tttatatgac tcacagaatg tggacttttt tcctgtttgg agtattttg taatgtaagt 4080

atcggatagc tgcaccacag catgcataaa ttgcacattt tgttttactt tctttataga 4140

atatttaatt tcaaaaatat aatttatgcc aaaaaaagca tacctttcaa ttttgctact 4200

tggttgattt agcacaaaat gcaaagtctt ggggcagaga gggggagtga aaaaaatttt 4260

ataggtaatt gttacaaaaa tacctgtcag aaaccctaac gctgcattgt aaaacaaatg   4320

gtgtaaacta gttttgaaaa gtggtaagga attgtgaaaa aaatctcaga cttaatgctc   4380

tctaaccaca tgagtttctt cttttttatt tagtaatacg ctgctacata tttggaggtt   4440

ctggtgtttg taggtcactg aacagacatt gaaatctgat ttatattgta taactgtaac   4500

atagaaagaa aaagtattta tattttttct gtaagaatat ttcattgagt tgtgtataat   4560

ttaaataaga tttgtcccca aatggttttg ctcaccttga ttttttttgt tgtgattttc   4620

ttgttttttgt ataatgtgta tagtttatgt caagggcatt aaaagcctcc tgaagcataa   4680

tcttatcaaa gggatacatt gttaataaaa tgtacttaaa attctt   4726

<210> 664

<211> 4409

<212> DNA

<213> Homo sapiens

<400> 664

ggcctttttt tttttttttt ttttgagaca gagtcttgcc ctgttgccca ggctggagtg   60

cagtggtgca atctcggctc actgcaagct ctgcctcctg ggttcaagtg attcttctgt   120

gtctgcctcc caagtagctg ggactacagg cgcctgccac catgcctggc taattttttgt   180

acttttagta gaaatggggt ttcagcgtgt tagccaggat ggtctcgaac tcctaacctt   240

gtgatccgcc cacctcagcc tccttaagtc ctgggattta caggcatgag ccaccacgcc   300

tgggctattt tctcacaatt tatgacttgt cccagaagtt gttaattttg atgaaatcca   360

gtttaccttt tgtttttctt ttatggatca tgttttttggt gttatgtcta agaactctgc   420

ctaactcaag gatactaaga ttttctcttc tcttttcttc cagaaatttt atagttttca   480

gttttatacc caggtctatg attgatatgc ttggacctgt gtccccgcca aaatttcttg   540

agttgtaggg gcgtggtggg agatgattgg ttcgtggagc agtttctcat gaatggttta   600

gcgccattcc ccttggtact gtcctcacga tagtaagttc tcatgagatc tggctgttta   660

aatgtgtgca gcacctcccc cttgctctct cttgctccta ttcctgccat gtgagacgcc   720

tttgccttct gccatgattg taagtttcct gaggcctccc tagaagccaa gctgaagcca   780

ccgtgcttcc tgtgcagcct gcagaactgt gagcaactca acctctttc ttcattaatt　840

acccagtcta gggtattctt tacagcagtg tgagaatgga ataatacatt gattgttttg　900

agtaaatttt tctatgtggg gcaaggtata gtcttctttt aatacattgc tggatttgta　960

tggaaccatt ctttgcagga gttctcactg taatgaaatt tgtccctgtt ttgttggttg　1020

ttttcatagc atctctggaa gttgatggta gaagaatccg atttactggg tcagctgaag　1080

gtaatggctt agctgttgta attcttacgg tgatgctggt aggcagtgac ttgcattctc　1140

tgatgtttcc tgagagcact ggttgcctat acccagactt ccagagtcaa ctcatttgtt　1200

cttatccaag tgagcaaact atacctaatg ccacaaatct acgataatac aaagatttgg　1260

gagtgtactt ttttctggca tatatatata attatgttgc tattgaataa ataatgccaa　1320

atacacacca gtcatcctgc tatgcggaac taagtatgcc tctttgaaat gccaaatgcc　1380

tgtatctttt gtagcttggg ctcaaattga tgaaattaga aattactgta tacatgtaat　1440

tcctcaggac agtgaggagc tcctgccttg ctttactgaa ttgtaaattg aaattctttc　1500

ctcagatcat taaagacttt taccttctgg gacgtggaga actgtttcag gccttcattg　1560

acacagctca acacatgttg aaaacaccac ccactgcagt aactgagcat gatgtgaatg　1620

tggcctttca acagtcagca cacaaggtat tgctagatga tgacaacctt ctccctctgt　1680

tgcacttgac aatcgagtat cacggaaagg agcacaaaga tgctactcag gcaagagaag　1740

ggccttctcg ggaaacttct ccccgggaag cccctgcatc tggctgggca gccctaggtc　1800

tttcctacaa agtacagtgg ccactacata ttctcttcac cccagctgtc ctggaaaagt　1860

acaatgttgt ttttaagtac ttactgagtg tgcgccgggt gcaagctgag ctgcagcact　1920

gctgggccct acaaatgcag cgcaagcacc tcaagtcgaa ccagactgat gcaatcaagt　1980

ggcgcctaag aaatcacatg gcatttttgg tggataatct tcagtactat ctccaggtag　2040

atgtgttgga gtctcagttc tcccagctgc ttcatcagat caattctacc cgagactttg　2100

aaagcatccg attggctcat gaccacttcc tgagcaattt gctggctcaa tcctttatcc　2160

tattgaaacc tgtaagtaag gctcattggt ttcctcagac tgcttctacc actgaccatt　2220

cccttaggca gtttgagttg acaggatacg aaaccatcat taagcaatta ttcaagtcca　2280

ttttaaaaca tttttttaaga atgtgtaaag cggcggggca tggtggctca tgcctgtaat　2340

cccagcactt tgggaggccg aggtgggcgg atcacaaggt caggagttca agaccagcct　2400

ggccaacatg gtgaaaaccc gtctctacta aaaatacaga agaaaaaaaa aataataggt　2460

gtggtggctc gcgcctgtaa tcccagctac ttgggaggcc tgaggcagga gaattgcttg　2520

```
gacccaggag gcagaggttg cagtgagcca agatcattcc actgcactcc agcctgggca  2580

acagagcaag attctgtctt gggggagcag ataaaaaaaa aaagaatgtg taaagcaaaa  2640

ctaaaaaggc atgttaaacg ggacctaaga tgtctttgaa tttctgaaat acagggtgtg  2700

gtgagcagct acagatgaaa gaattatgtg cttaaaccct caggagttaa agaaactcaa  2760

aattcttgct gacaatacag aaaaaccaat gaaaagcata tagagttcac cttcttagaa  2820

atcttttgga ccaggatgga tcagtcattt gaaagttctt ttcatagaca actagagtag  2880

tgtttctctc tcgatctatg tatgtgtttc tgtaagtaca tatatgtctc cttcgtggca  2940

gttattttca actttggctg cacattggaa tcatcgggac tctttaaaaa aatctaggtg  3000

acagagcact taaattagaa tccctgtaat agtgggaccc aggtactaat ttttttaaa  3060

gctcacaagc tagttccaat tccaggataa agaacaggaa gactgaaatg atctctggta  3120

gtttctaatg gaacggttat gcctcctctg acatgagctg gttgttattc ctcagtgtgc  3180

tacagcacag ctgttacaga cttttaaaaa atgttctggt gtttagggct atttctgctg  3240

taccaggaag agtaagatat atattaatag atgccactcc agagggctgg ctgaaaacaa  3300

ccaagaacta ctgtgatggg tagatgctgt ccttatgtgg catagatgta tccgtaggga  3360

aaagcagaat aacagagcag gtcatcatca ttaaatattt attgagtgct tactgtatgc  3420

aaggcactgg ggatacaaag aggtataatt catggctctg cccttaagga gctcacaatc  3480

tagttggaaa aacaagacat atatatatat atacatacaa aaatcagtaa caacacagag  3540

gcctgaacaa ttgccaagtg dacaacagta cagataataa agaagcaaga aacgagggtt  3600

cactaaaggc tatagtgggg aagggagtgc ttcactgaga gagtgggact tgaactggta  3660

ttaaaaacaa gagcatcccg ggcaaaggga acaacactca cagctcagag gcaggaagac  3720

actctgcggg tctaagaaat gaagagttaa atgtggctag attggaggtt tggtgcaggg  3780

ctaagagagt aatactcgct tagccaggaa aggatgcatt tgttttacgc attttgtgcg  3840

tctgaggggc tggcaggcct tgcacgtggc agtgtctatc ctgtcagatt tgggaggtca  3900

gctattaatt agatcagcta ttaatcagac tgttctccta acactttaac ttcatggatg  3960

taccttcctt cctttcctaa tgccaactct gtttcccggg taggtgtttc actgcctgaa  4020

tgaaatccta gatctctgtc acagtttttg ttcgctggtc agtcagaacc taggcccact  4080

ggatgagcgt ggagccgccc agctgagcat tctcgtgaag ggctttagcc gccagtcttc  4140

actcctgttc aagattctct ccagtgttcg gaatcatcag atcaactcag atttggctca  4200

actactgtta cgactagatt ataacaaata ctatacccag gctggtggaa ctctgggcag  4260
```

tttcgggatg tgaaaatttc tggctcataa attgaaataa cagccacgtt cccaaggttg　4320

taacagaaga ttcaaaacat cccattctag ccacacacaa ataaatatct gcggcttagt　4380

gaaaaaaaaa aaaaaaaaaa aaaaaaaag　4409

<210> 665

<211> 5340

<212> DNA

<213> Homo sapiens

<400> 665

tattctaatt ggcgactgaa agtgatggag cataaccaag gagagccact gcccttccca　60

ccaactggag gctgctggtc accactggtg gattacgtgc ctgaaacgtc atcacctgga　120

ttacctcttc acaggtgtaa catagcagtg atccttttga ctgatctcat cattgatcat　180

agtgtgaagg tggaatgggg aagctacctc catcttcttc ttcatgcaat ttttataggg　240

tttgaccact gccaccctga ggtgtatgaa cattgtaaac gcctgcttct gcacttatta　300

atagtaatgg gacccaatag taacatccga actgttgctt ctgtccttct caggaacaag　360

gagtttaatg agcccagggt gcttacagtc aaacaagttg cacacttaga ttataatttc　420

acagcaggca ttaacgattt tatacctgat taccagccct cccctatgac tgactcaggg　480

cttagctcaa gttctacctc ttctagtatc agcttaggaa ataacagtgc tgccatttca　540

catctgcaca ccactatcct caatgaggtt gacatctcag tggagcagga tggaaaagtc　600

aaaaccctca tggaattcat tacctcaaga aaaagagggc ccctttggaa ccatgaggat　660

gtttctgcca agaatcctag cataaagagt gctgaacagt taactacatt tttgaaacat　720

gtggtttctg ttttttaagca gtcaagctca gaaggaattc atctggaaca tcatcttagt　780

gaagttgctc tgcaaacagc actttcctgt cttctcgac actatgctgg gagatccttt　840

cagattttca gggcccctaaa gcagcctctc actgcaacta cactttctga tgttctctcc　900

agacttgtag aaactgtagg ggatccagga gaagatgcac agggatttgt gattgagctt　960

cttctcacat tggaatctgc aattgatact ttggctgaaa ccatgaagca ttatgatctt　1020

ctttctgccc tttctcaaac ctcatatcat gatcctataa tgggaaacaa gtatgcagct　1080

aacaggaaaa gcactggaca actcaatcta agcacaagtc ccattaatag tagcagttat 1140

ttgggatata acagtaatgc aagaagtaac tctttgaggt taagtttgat tggtgaccga 1200

cgaggtgacc ggcggcggag taacacactg gatataatgg atggacggat aaaccatagc 1260

agtagtttag caaggactag aagcctttcc tctctaagag agaaaggaat gtatgacgtg 1320

cagtccacta ctgagcctac caacttgatg gccaccattt tttggatagc agcatcttta 1380

ttagaatcag attatgaata tgaatacctc ctggctctca ggcttctcaa caaactgctt 1440

atccatttgc ctttggataa atcagagagt cgagagaaga ttgaaaatgt acaaagcaaa 1500

ttgaaatgga ctaattttcc aggacttcag cagctcttcc ttaagggttt tacctcagca 1560

tctacacaag aaatgaccgt gcacctcctc agtaaactca tttctgtctc caaacataca 1620

ttggtggatc cttcccaatt gtcaggcttt cctcttaaca tcctttgctt attgcctcac 1680

ttaatccagc attttgacag cccaactcag ttttgcaaag aaacagctag tcgaatagca 1740

aaggtttgtg cagaagaaaa atgcccaaca cttgtcaatc tggcacacat gatgagtttg 1800

tacagtacac acacgtattc cagagactgt tctaactgga tcaatgtcgt gtgcagatac 1860

ctgcatgact ccttctcaga tacaacattt aatcttgtga cttatcttgc agagctgtta 1920

gagaaaggat tgtccagtat gcagcaatca ttactacaga ttatttatag tctattgagt 1980

catattgacc tgtctgcagc cccagccaag cagtttaatc tggagatcat aaagattatt 2040

ggcaaatatg tacagagtcc ttactggaag gaagccctta acatattaaa gctggtggtg 2100

tcacgctctg cgagtcttgt cgtacccagt gatatcccca agacctatgg aggagataca 2160

ggttctcctg aaatatcctt cactaaaatt tttaataatg tttctaagga gttgcctggg 2220

aagaccttag attttcattt tgatatatct gagacaccaa ttattggaaa caaatatggt 2280

gatcagcaca gtgcggctgg aagaaatggg aaaccaaaag ttattgctgt cactagaagt 2340

acttcctcaa cttcttctgg ttctaattct aatgccttgg ttcctgttag ttggaaaagg 2400

ccacagttat cacagcgaag aacaagagaa aagctaatga atgtgctttc tctctgtggt 2460

ccagaatctg gcctcccaaa gaacccatca gttgtatttt cttctaatga ggatttggaa 2520

gtcggtgacc aacagactag cctaatttct acaacagaag acataaatca agaggaagaa 2580

gtagctgtgg aagataatag cagtgaacaa cagtttggtg tttttaagga ttttgacttt 2640

ttagatgttg aattggaaga tgcagagggt gaaagtatgg acaatttcaa ctggggagtt 2700

cgcaggcgct cactggacag tattgacaaa ggggacactc catccctcca ggagtaccag 2760

tgctctagta gcacccccag cctgaacctc accaatcagg aggatacaga tgagtcctcg 2820

gaagaagaag cggcacttac agcaagccag atactctcac gcacacagat gttaaacagt 2880

gattctgcca ctgatgaaac aataccagac catcctgact tacttctcca gtctgaagat 2940

tccactggca gcatcacaac agaggaagtg cttcaaatca gggatgagac cccaactttg 3000

gaggcttctc tagataatgc taacagccgg ctgcctgagg atacaacttc agtattaaag 3060

gaggaacatg ttacaacctt tgaagatgaa ggatcctata taattcaaga acagcaggaa 3120

tctcttgtgt gtcaaggaat tcttgattta gaagaaactg aaatgccaga gcctctagct 3180

cctgaaagtt accccgagtc agtctgtgaa gaggatgtta ccttagctct gaaagagcta 3240

gatgaaagat gtgaagaaga agaagcggat ttctccggac tgtctagtca agatgaagaa 3300

gagcaagatg gtttttccaga agtacagacg tcgcctctgc cgtcaccatt tctttctgcc 3360

atcatagccg cctttcagcc cgtggcatat gatgatgaag aggaagcctg gcgctgccac 3420

gtcaatcaga tgctgtctga caccgacggg tcctctgcag tgtttacttt tcatgtgttt 3480

tctaggctgt ttcagacaat tcaaagaaag tttggagaaa taactaatga ggcagtcagc 3540

tttcttggtg atagtctgca acgcattggt accaaattta aaagttcctt ggaagtgatg 3600

atgctgtgtt cagaatgccc aacagtcttt gtggatgctg aaacactgat gtcatgtggt 3660

ttgctggaaa cactcaagtt tggtgttttg gagttgcaag aacacctgga tacatacaat 3720

gtgaaaagag aagccgctga gcagtggcta gatgattgta gaggacatt tggtgccaaa 3780

gaagacatgt ataggataaa cacagatgca caacaaatgg aaatactagc agaattggag 3840

ctctgccgaa gattatacaa attgcatttt caattgctgc ttctgttcca ggcctactgt 3900

aaacttatca accaagtaaa tacgataaaa aatgaagcag aggtcatcaa catgtcagag 3960

gaacttgccc aactggaaag tatcctcaaa gaagctgagt ccgcttccga aaacgaagaa 4020

attgacattt ccaaagctgc acaaactact atagaaactg ccattcattc tttaattgaa 4080

actttgaaaa ataaagaatt tatatcagct gtagcacaag tcaaagcttt cagatctctc 4140

tggcccagtg atatctttgg cagttgtgaa gatgaccctg tacagacact gttacatata 4200

tatttccatc atcagacgct gggccagaca ggaagctttg cagttatagg ctctaacctg 4260

gacatgtcag aagccaacta caaactgatg gaacttaatc tggaaataag agagtctcta 4320

cgcatggtgc aatcatacca acttctagca caggccaaac caatgggaaa tatggtgagc 4380

actggattct gagacacttc aggcctttag gaaagaaact aaactgaaga tgatgaagaa 4440

tattaaccaa gcaccttta tggacccttg cattcactga taactttctg gcagcatcta 4500

cttttttagtg taactaatgt caaactgtat catcaaaaac aaagatctga aagaaaaaaa 4560

catctgatat tttaacagct gccaatatct cccacaataa ctgcgtgaag aaggaatttt 4620

ttaattactt aacctacgtg aaaagaaaag ggctaaaagt gatgcctaca aatacattac 4680

tttctggggga aagaaaagaa ttccaagaat gtttgcaata atggcctcca atactgaaac 4740

aaccaaaagc aggtgaaatg aggctgaaat caaggctgtt tcattttagc tgaagacctg 4800

caaagctgct tggatttcta gcagttgaaa acctaacctg caattgatgc ttaatcatcc 4860

atccacatga acatgcagtc agctatacgc atcaagactc gtttgcaaaa accattgatt 4920

tttcagtatg tgggataagg gtttgggttt ttttgttttt tggtctgtat aaggaattat 4980

gtgtgtgtga gttgggatgt atggatatgt gatagtcata ttttcaaggt atggatgttt 5040

ggtgataacg tctcagagca tgcctaaaag agcactgcaa gattattttt gaagaaatgt 5100

tattttatta gatctaactc ttcatagtat gtaaatgtta gaacattta ataatatttt 5160

aaaactgggc tttcccagta tttcaaaaag aaataatata tctgttaacg ttattggaat 5220

gctgctcagt tctctgatca gtgcttatgt tatgattgtt gataactaac caaagtagat 5280

gcctgcagag actttaaaat gtaaaataaa gatgtatgct gcctgtcagc tattctcatt 5340

<210> 666

<211> 3494

<212> DNA

<213> Homo sapiens

<400> 666

cttaacacct cctgtgactt agccgcacct cctctccttt gactttcatt ccacctcctt 60

ccaggatcgc aaggtcccta tttgtcctgg aaacggcttc aaggtagtct agggtgccgt 120

ttgccggggg aggaaggtgc tctggttgat agagtcgcct ggccgcacac tctttttggc 180

acataacaac gttctacaga gccggggtgg agcgtgcttt ctcataagtg ctctgcaggt 240

ttggagagag aggatatgag gagcaccctt ttctgttttt tttaacccaa agattagctt 300

ggaaaagggg cagaggggtg cactggaact caggtctgcc taagcagcac agcagaccaa 360

ggtctagaga tgacatctgc tcgcagctgt tcttccacca gcccgcatcc tggaaagggg 420

tcttgtggca cacaagagtt cacatccttc cctcgtgaaa taaggacttt gtgttcatca 480

```
tctcttgtaa gaagcagagc tgaaagcaca gaattaagaa ataaaaggga agtgggtgcc   540

tatataaagg gaagtgaaaa tggggttgctg tcccatgcaa agaccctgga aagctgttaa   600

cagctcagct tgtcactttc accatctgca tttgtccaga gtgattgaga tttgcgttgt   660

tgtggagaga aaggcgcctg ttgcacaatg gagtgagatt gccactgctg tcaggacctc   720

tgtgtttggc ttgacacttt ttgagttctc agcagtctcg ggaccctcaa gagtggaagc   780

atttttggat gttaaatgct ggggttaatt gaagttaaga gcttgtttta ctgggcatgg   840

tggctcacac ctataatccc gacactttgg gaggccaagg cgggcagatc acttgagtcc   900

aggagtttga gaccagcctg ggcaacatag caaaacccca tctctacaaa aaatacaaag   960

ctgggcgtgg tggtgtatgc ctgtggtccc agctccttgg gaggctgagg ggagcagatc  1020

tcttgagccc aggaggcaga gtttgcagtg agccatgatc gtgccactgc actccagcct  1080

gggcaacaga gtgagatcct gtcttaaaac aaacaaaaaa aacaaacttg ttttcattta  1140

gactcttcct ggcgttgggg acctattgga ataggtttag tgtgaactga gagctagaag  1200

tgttagagga gagagggagg aacagagcc cgctggagcg agtgcccttc ctaccttatc  1260

actgcatgcc aggcatgtgc cggcgctttg gtcctcctca tttcattctt gactgccacc  1320

tgagacacga tggttactag ctccatttta taggtggtga aactgaggct tggggaaggt  1380

cagaccccaa gggtgccatt tagtcagtgg cagagccaga tccaaatgca ggtctcctga  1440

ctccaagtgc agggctcatt ttatcgtccg gttgcagcac gctggcggcc ccttgagccc  1500

caacctggat accatagggg aggagcagag aagccaggaa caccacagcc ctgggccaag  1560

gtgcggggct gaaagaactt cccagcgctc agcctgggac tagtggaatg ggctgggccc  1620

tggggctggc agcggtggcc ccggggagcc tgggaatgag tagggagcac agggaggtgt  1680

gggagggcct gggaaccatg aaaaggaggg cgggtgcagg gaagtcgcct gctagtgaag  1740

tggcgagggg gccctgtggg actccaggga atggccacgg caggttgtcc tccaggagtt  1800

gagagccact ggacatggca gctgcctgtg ttctcagcca ccacagtaac caaagaaatc  1860

ttggttttaa aattcaagtt gccatggaaa cgctcccatc ctcgacttgg cttattattt  1920

aaaataacat ctctacagca caaagccccc gggtacatcc aaggacactg ctgtctgccc  1980

acgagacatg ctaacctcac agtgtggagg ctgtgtgggt cactgacatg catggccacg  2040

tgagacgctg cctacccacg agtcacggaa aagggggaaga ttattaagaa agtcactagg  2100

ggccaggtcc agtggctcat gcctgtaatc ctagcacttt gggaagctga ggcagttaga  2160

tcccttgaag ccaggctggt ctcaaactcc tgacctcagg cgatccacct gcctcagcct  2220
```

cccaaagtgc tgagattaca agcttgagcc accatgccgg ttgaacttat ttttatctgt 2280

gttggccatt tgtagttttt ctattatgct ggttccattt ttctgacttt gaagagcctt 2340

ttgtggaaac gaagcctaaa gtatatgtga gtactgcttt gtttcgtcag tttttgtttt 2400

aaagagactt ttcagtgtaa tgcaagcatt ttcccttgaa ggctgtgttt cctgtcaatc 2460

ctaagctttc ctccagcatt accttttttaa aaaactttat tttctatatt gatggggtct 2520

cacaatgttg tccaggctgg tgttgaacac ctggcctcaa gtgatccact tgccttggcc 2580

tcccaaagta ctgggattat aggcatcagc caccgcaccc agcctgtttt tcaaagggca 2640

ttgatttttt tcataaaact ttttaaatta agatctgtgg gcctggtgcg gtgcctcacg 2700

cctgtcatcg cagcactttg ggaggctgag tcaggtggat cacgaggtcg ggcgttcgag 2760

accagcctgg ccaaaatggt gaaaccctgt ctttactaaa aatatgaaaa ttagctgggc 2820

gtgatggcac atgcctgtgg tcccgctgct cgggaagctg aggtaggaga atagcttgaa 2880

cccaggaggc agaggttgca gtgagccgag atcatgccat tgcactccag cctgggggac 2940

agagtgagac tccgtctcaa aaaaaacaaa acaattctgt gttgcatgtg gtactttttg 3000

tgtgtgagga gtccagtgtg aagattcaga cttcaggcag ccacttgtac aagcactgtc 3060

ctgtttcctc tctggcctca cctaggtaac gctgattcct ccacggagga tgtgcttctg 3120

agtggtccgt tgggtgctgt gctgatgagc atcacccagc attttacgac acatgtgctg 3180

ccccagaggg ctgggctccc gtcagagctc ttttccactg gctgggtgcg gtggctcaca 3240

cctgtaatcc cagcactttg ggaggctgag tcggtggat cacctgaggt cgggagttcg 3300

agaccggcct ggctaacatg gtggaacccc gtctctacta aaaatacaga aattgggtgc 3360

gtgtggtggc gcacgcctgt aatcccagct acttgggagg ctaagaacct gggaggtgga 3420

ggctgcagtg agccgggatt gtgccactgt accccagact gggtgacatg gcccacagac 3480

caagaccctg tctc 3494

<210> 667

<211> 3462

<212> DNA

<213> Homo sapiens

<400> 667

```
ctaaggacac agtacagatc tcacagggac actccttatc ccttgcagag ttccagacac    60

tactgatggt caccaaagca acatttcatc agaaaacaca gtgctgggct tgtgaagaag   120

gtgtccagca gagcttccac tgcccctgta ggctgcaggc agctgcttca gttgagagat   180

acactgagct cctcaaagaa ttcctattta aggtacaaag cagcgactgg atgccctgct   240

ggattccact attgccacag gctttgataa ctctaagttc atgctcctta ggaaagtgca   300

cttttacac caatgttaga cagttccctc agttgccttt actggacatc aaggagttca   360

cattttgac aatctttcag tcctgaactg tccaaggggt ggaggtagct ccatacagga   420

agctgcctgc tgcgtgtgga tcagtaatat cagacttgcc caacagctca ctggagacat   480

caaaaccaat gcatggggga tgcatgacgt cacccaaata tttaccacac gcttttgctg   540

ccagagaccc cagatcactt ttcctgcctc ctgctaaaca aatgggagca gtagcttctc   600

atcagcctcc acatttcatt actcataatt gtggccttcc taatgtctca tgcccctaag   660

cacttattac aatgtctcaa cagccttctc tcagcctctc aaaatattag tcatcattaa   720

aataaatgtc tgatgttaaa gcatcagggt caattgtact gtgacaccta aaatttcatg   780

ctgcatccca ccaggtcctc agcctaatgg ctttcatgcc cccaacagac tgctaaactc   840

tttgaattag tcaagcatat ccctcaaggg acaaggggtt accccaccct ctgatttcta   900

ccaagcctgc ctcccgcacc ctgtgctcca gagtgaaccc ccgggtagac ctgcacagat   960

gcagtgtcat cccctgttgg gctgagtatg cgagatgaat aaattacggt gaatttcgtc  1020

tactcagtgt ttgttgtgtc tgcagccatc ctcagaattc tagggcaaga ctaatttctt  1080

caccaatgac gtgaacagga aggaacccaa ctaggaattg ccttttttaa aaaatccctt  1140

cccaccctct taattatgta gtgcatgcat tttatagctt ttttgctcat tccattatct  1200

gaggtcaggc actgatattt aacccatctt tagcctcgga ggagggcaga ggaacagtgg  1260

tcatatttat ttccctaagt ggcaaagaca tgatttcctc ctgtgccact caaattcact  1320

ccttctttaa cttgatgctc agtaggttgt gtttcacttg tctatgcaga ttgttaggaa  1380

gacgagactc agctttcatt tttgatgttg tcatagagaa gactctatgg taatgcttat  1440

tttcacagtc aactttctct tcttttcccc cagacagaaa ttgcaaactc aggtgagtga  1500

cagctttctg gagtctgcaa acatagatta ttttccctct tttgatggca aatttcttat  1560

atccccacga aaaataaaat acttacatat aattttggca tgtcatattg gttgccaact  1620

acacgtaaaa acattccttg attttaaatc tacattaatt ataaaaacgg gtagtcacaa  1680
```

aaaattatag tgtaaaaatt tatagacctc ttcttaggac taaatgagtt actattaact 1740

aatatttatt gtgcaattag tgcatggcag aagcttccta tgtactattt cattttatat 1800

gtaaaacaat attctatgca caatgttata atctcccctt gcctccaatt tggacgtgat 1860

aaaacagcgt cgtaaagttt tcaccccaga gttctctgct tagtaagaag tagaaggaag 1920

tctaaaccta agtcatctga tttcagagcc catataatta aatgctctaa atgcagattc 1980

ccagggtggt ggtttctatg agagcctgtc acatacgatg taggacactg cttccctgta 2040

acgtgtgcaa gattcccttg atgatggtga ctatgagagc ctgttacata tgacgtagga 2100

cagcacttcc ctgtaacatg cacaagattc ccgtgatgat ggtgactatg agagcctgtc 2160

acatgtgatg taggacagtg cttcctctgt gacatgcaca ggattcaccc ggggatcttg 2220

ttgggatgca aactcataga ccacactttg actagctaag aaaagagcat ttaaattgat 2280

gtcctggtgg cagtgctggg atgctgctgt tcatgtgggc actggctcac catattaaca 2340

aagcttggga cttccagtcc ctgctggaaa agagatacag acacatagga tgtgactgtg 2400

catatggagt gtctgttgtg ttctggacat tgtgctagac actagagata aaaagtcaaa 2460

tatcccttgc ctctatctga aaggagcttc ctactcagtg gattctgact gcagtatata 2520

ttttctcttc tgacctggga gagtgagctc tacctcaatg ttggtaattg aacactgccc 2580

agtggatttg acaggggaga ccacaggtag ttgtgttcct acatagctat gaccatagta 2640

tatctcacga tgccatttcc ccgttgtcaa aaggctccct ccagtatcat acacgctccc 2700

catgattata cattcttctt ccttccacca aattttcctt aatcttgtaa agataaaaac 2760

ataaaccaca ttcttgtcat attaattata tattaatgat gaaaattcct tactttcat 2820

gtgtttaata ttttctccca atttatagaa tatattggtt aatataagaa taaattttag 2880

ccatgcacat ctattacaaa cttcatttta tactttgcta tttttaaatt tcttatgctc 2940

ttataaaaca tgtgttctgg actcacgttg gcttccattt cttccctctg gcttctatta 3000

gtttaggcta tgagcataga tggaagaggt ggctgctgta ttggatcaag gatatgagca 3060

gagatggatg aggcagcggc tgtaatggat caaggctatg aacatcttgt gaagtaggat 3120

gttaagtctg caaatatcag agtgaatcca aacttatcaa ttcaacactg gattgtaaaa 3180

cagctcaaaa aaagactaaa aacacagctc tacactttag gaggttgggg caggcagatt 3240

gctcgagctc aggagtggga gacaagttta ggaaacatgg aaaaaccctg tctcaaaaaa 3300

aaaaaaaatt tgaattagct gggtatggtg gtataagcct gtggttccag cttctcggga 3360

ggctgaggtg agaggattgc ttgagcctgg aaggtgaggc tgcagtgagc tctgatcaca 3420

ccactgcatt ccagcctggg tgatagagtg agaccctgtc tt　　　　　　　　3462

<210> 668

<211> 4073

<212> DNA

<213> Homo sapiens

<400> 668

atctctttag gataaacata agagatatgt gttttagggt atctgtttag gataaacata　　60

gagaaatact gcatccgcat cttggcttgt ttatttgttt tttgagatgg agtctcgctc　　120

tgttttccag gctggagtgc agtggtgtga tctcggctca ctgcaacctc tgcctccagg　　180

gttcaggtga ttctcctgcc tcggcctctc gagtagctgg gattgcaggt gtgagccacc　　240

acacccggcc tgcactggca tcttgggagt gtcccttgct ttctgtcaga tgcgtatatt　　300

ctatattctt ttcttttcca gagaaaacca gcaacatggt ggcaaagaga tagatttcat　　360

ttattcagca cacacttaga catttcccat tccatttatc ctgtgttaga ggcatgtcat　　420

tgagatgtca tagatctagt tccataccat ctagagcagt ttcattgtgc atccagctgt　　480

gctctgaact agcattcctg aaagagaact gctttgcatt tttgtttttt gttaattgcg　　540

ttggtttatt ttaggatgac tgtcttaggt cattgacgag atttgccgca gcacactgga　　600

cagtggcatc agtttcagtg gtgcaaggac atttttgtaa actttttgca tcactggtgc　　660

ctaatgacag ccatgaggaa cttccatgca tattagatat tgacatgttt catttattgg　　720

tgggcttggt gcttgcattt cctgcgttgc agtgtcagga tttttcaggg atcagccttg　　780

gcactggaga ccttcacatt ttccatctgg ttactatggc acacatcata cagatcttac　　840

ttacctcatg tacagaagag aatggcatgg atcaagaaaa tcccccttgt gaagaagaat　　900

cagcagttct tgctttgtat aaaacacttc accagtatac gggaagtgcc ttgaaagaaa　　960

taccatccgg ctggcatctg tggaggagtg tcagagctgg aatcatgcct ttcctgaagt　　1020

gttctgcttt attttttcat tacttaaatg gagttccttc cccacccgac attcaagttc　　1080

ctggaacaag ccattttgaa catttatgta gctatctttc cctaccaaac aacctcattt　　1140

gccttttca agaaaatagt gagataatga attcactgat tgaaagttgg tgccgtaaca　　1200

gtgaagttaa aagatatcta gaaggtgaaa gagatgctat aagatatcca agagaatcta 1260

acaaattaat aaaccttcca gaggattaca gcagcctcat taatcaagca tccaatttct 1320

cgtgcccgaa atcaggtggt gataagagca gagccccaac tctgtgcctt gtgtgcggat 1380

ctctgctgtg ctcccagagt tactgctgcc agactgaact ggaaggggag gatgtaggag 1440

cctgcacagc tcacacctac tcctgtggct ctggagtggg catcttcctg agagtacggg 1500

aatgtcaggt gctattttta gctggcaaaa ccaaaggctg tttttattct cctccttacc 1560

ttgatgacta tggggagacc gaccagggac tcagacgggg aaatccttta catttatgca 1620

aagagcgatt caagaagatt cagaagctct ggcaccaaca cagtgtcaca gaggaaattg 1680

gacatgcaca ggaagccaat cagacactgg ttggcattga ctggcaacat ttataattat 1740

tgcaccacca aaaaacacaa acttggattt ttttaaccca gttggctttt taagaaagaa 1800

agaagttctg ctgaatttgg aaataaattc tttatttaaa ctttccttcc cagtttttata 1860

gtttctggtt ctgaggactg atgaaaatca tcttccatca gcagattttc ttgcactgtt 1920

tgctgtgccc ctcaaatata atgtcttggg ttttaagatc gagcaaggag cttctcttcc 1980

tagattggat cccagcccct ttgtgggggt ctgactgcat agtcccagcc attatgtgat 2040

atttcacgtt attgatgata gtgaaccgtg ggtccgaagc tgactcaacg gaggcaggga 2100

acaaagtctc tgtggtctgt tgggtcatac ttcctggttc cactgagtgg cccaacactg 2160

ggactgggtt ggtgtcccct ctgctgacag gaccctactc ctaggagcaa agtggttgat 2220

tttgaaggca gtgttccctt ctctccattg actatgagag agttgggggga cacacatgca 2280

gaagaagccc gtggggagaa ggtggattcc tggtgtgctg gctggttttt cagggctgtt 2340

agaggttttt ttttttttct ttttcttttt tatggcaaga cttttggctt tgagaaaact 2400

cacttagagg gctttccaaa aacttaggat ggtctaaaaa attaggatat tcttttagaa 2460

ttaggaagaa aaattaggat attctaaaag aatatggatt aaaaatttag gatattcttt 2520

tagatatcct aatatctaga tgagaggcct tccttcataa gatctggttg tttgggctgt 2580

ggttggcata agtgatattt attttggcct ctgtcacatc cagtttcttg agctttttaag 2640

gtaagcttct tttggctttt tttcagatgt tcaccaggct taagtttaaa ataataggta 2700

ttctaaaaga gtatcctaat tttcttatct gtattctttt agaatacccct aatgtttcag 2760

acagtgatat tctcttgtta tttctaaggc taaattggca gagtatatca tctaaagcca 2820

aacactgaag aaggtgagaa cccactccca cccagccagc atttcctgga acagacaagc 2880

tgctgcttcc ttgctggctc acttagtgca ttcctgggat ggtctggcac ccaggctttt 2940

```
tattcttttt gatcattgtt cttactgagg tgccttccta gaacaagagc cacttacaaa   3000

atagcttata attattatgt accacacaac tactattgtt tgatgtatga ctgctgagag   3060

cttgaataca tgcagagagt gactgaagac ttagtagagg aataaattct gagcctgtct   3120

aaggtggggc taaggaacag atgagtaata agaggctctt ggattttttt aaccaatgca   3180

actgaccctt tcaatcagtt ttctttgaat tacatctaca agttttgttc cactcagcta   3240

ccagtcaact aggcatgctc cacagtatca caggaagaag gtcagaaatc tggaactgaa   3300

gctaaaagaa gtgaggatgt agaagccaca ttcctctcca aggtagtgtg tgaaagaacc   3360

gccccctctt gacaggagga tgaccgtcgc cattcttgcg tgggactgac tcacccagct   3420

gagaggagga ccaatagaaa gaaaattcac atttgagtcc acctctctcc ccctttttct   3480

ggccttcatt cataagatct ggttgtttgg ctgtaggtg gcataattca tgtttatttt   3540

ggcccctgtc acatccagtt tctttagctt ttaaggtaag cttcttttgg cttttttttca   3600

tatgttcacc aagctaaaat ttaaaataat aagaccaggt ttctctctct acaagtggat   3660

tataaacatt ttcaccaaat cataacaata ctccagcttt ccggtccgac ttcctaggag   3720

cctggagtta gcaaaggttg tctctggatt tcattctctg agaatatcac agagcctggg   3780

agaagatgaa tttacatgaa attgcaacat acacacacttt ttattttctg gtgttaagct   3840

agttgtcttt cctaccttac aaatcatgtt agttttatga tttgttccgc atgttttatg   3900

tttattgtag aaatgtttat ataacatacg ctttccatat cagggaaaat catatctgtt   3960

taataaattg gctataactt taatatctgt ggacaacttg taaaatttgg aatgtatcat   4020

atgtaaaaag tttaaagata tccaaataaa tgctttaggt gttggcatta ctt          4073
```

<210> 669

<211> 3645

<212> DNA

<213> Homo sapiens

<400> 669

```
tcaagatgct tttgtgtgta ttatgggatt gtatttatgg ccttgtccct gcattgtgga     60

tgtcaagggc cagttgccac gtgcttagtc atatacctaa actcagggaa cacacacacg    120
```

catgcttatg gactcacaca cactcacact cttacccaca ctcattctag ccacactcac 180

actcatatat actcaccaat acgctcacac tcacacatat ccttacacac ccacactctc 240

acataccctt acacacccac acacccttac acactcacac tcacggtagc cacactcatg 300

tataaccaat atgctcacac atgtaccctt acacacccac acatactagc catactcaca 360

ctcatatata ctcaccaata agctcacaca cataccctta cacacccaca caccccctta 420

cacacacata ctcttacacg cccacacaca cccttacaca cccacacaca tacccttaca 480

cagccacaca cataccccttg gacacccaca ctcactagcc actcatatat actcaccaat 540

aagctcacac acacatagcc ttacacacac atccttaccc acatttacac acactcatac 600

ccttacactg tcacactcac atgtacccctt acacacccac actcacacac atccttaccc 660

acactcacac acccttacac acccacactc tcacacctt acacacccac tcacacacat 720

acccttaccc ccacacacac ccttatacac ccacactcac actctagcta cacccacact 780

catatatagt caccaatatg ctcacactct cgcactcaca tgctgtcgtg ctcgctcaca 840

taccgttgca cactcacatg ctctcacaca ctctcacggt gaaatctgtg cctgccacca 900

cactcaggtt gcgatgtgtg tttcacttt agctcctcta aggtttttact caccctggct 960

ccaccaaact ggattttacc atagtctatg cttaaatact gttcatctct tcttctacac 1020

aaaagtatta agaatttacc tgcctgcaag ttattggaat atcctgggca aaagcaaata 1080

aaactttccc ttttcccttg ttcgacaccc cctcatcagt gacccccacg acacgacccc 1140

accaccctat ctggcttggc atgtgatgct tcaggaaggg cacagggttt ccacggctcc 1200

tgttaccctc ttaagcctca gaaaacattg gcacaggcag agaggagagc tgtcatctga 1260

gtctctctgt gggatcctgg gctcttaggg aaaggccaga cagggagggg cgggagagat 1320

ttctgtggcc tccaagattc ctgggaaggc gaagtctgga tttccttgga gaggaaggag 1380

ggcttaggcc agccacataa ttagggtgca gtagacaaac agaaatcatt tcttttggtc 1440

cctcatctgc ctcaaggctg tgtttgctcc acatggccgc acaggcactt gcgtctgtgc 1500

cccttggggc tggcagagat ggaggagaaa gccttaagca ccatctctcc tgattagcgc 1560

tccacgcagc ttctcttcac agcccctccc acacactgtg tcccactact cagacacatg 1620

ggccgtgggc acagagggaa agggaccttg ggaagaatag ggagccaagc cactcttcac 1680

cctcccaggt gtcgcccata gtggggcaca tggggacacg gtggccactc accccctgcc 1740

actgagtccc acagtgcagc tgggcctgtg gtcagatgcc acagggacac catagcaccc 1800

gtagagtgtg tcatttcctt ggtgcacgag ggccagatga tgtccccaga ggctcactgg 1860

```
cttcccacag cacagaggga cctggcactg ctaccctaag atggaattgt taaaactacc  1920
tccatttttta tttttaaaag tatgatgtca atgcataaaa taaaaattgc tttctgtcag  1980
atgcttcttt attcaagccc ctaaagaaat gttttcttgc ctaaggcagc tcatattaaa  2040
atgtctaaag cccaagagaa gtctaataaa tttcagcttt atgactttgt ttactctggg  2100
tgtagaaaaa gaattctttt atacgtagcc tagtttccag aacttccagg gtcaaaagtt  2160
aacaaatttg gggaaaacag aagagaaag atagcataca gtattctgtt ttcctattaa  2220
aatgaggaaa acaaaggagt catcagaact ataatttacg ggaaagtgtg cagacatcca  2280
tctgcttttta ttgaaaaaat accctgcaga tgttgggcct aattatgaat cctccatttt  2340
cttgatgaaa aactttagtg gcatctcaat ctctgatcgg taaactgggt gtcgtagcac  2400
ttacaaaata gaattatttc attgatcttt agccatctat tatttttttg tagatgagag  2460
agcattcagc atgaaggctg tttctacctg aatactaaat gttggtttca ttcccacagg  2520
ttcacagcaa acaggattcc taaatgccct taaggacagt cctgcaagcg tcctggaggc  2580
tgtggtgtgc ttcttctctg tctggtccat cgttggcctc tcaggattcc acacctactt  2640
gatcagctcc aaccagacaa caaatgagga cattaaagga tcctggtcaa ataaaagagg  2700
taaagaaaat tacaatccct acagctacgg aaatatcttt accaactgct gtgttgccct  2760
gtgtgggccc atctcaccaa gcctgatcga cagaagaggg tacatccagc ccgacacgcc  2820
gcagccagca gcaccctcca atggcatcac catgtacggg gccacgcagt cacagagtga  2880
catggctgca gccacgcccc tgctgcagag cgagcccagc ctcaccagcg acgagctgca  2940
cctgcccggg aagcctggcc tgggcacgcc ctgcgccagc ctcacactgg gcccgcccac  3000
accgcccgcc tccatgccca acctcgccga ggccacgctc gcggacgtga tgccccggaa  3060
agatgagcac atgggccacc agttcctgac gcccgatgag gcgccctcgc cccccaggct  3120
actggcggcg ggcagccccc tggcgcacag ccgcaccatg cacgtgctgg gcctggccag  3180
ccaggactcc ctgcatgagg actctgtgcg cggcctggtg aagctcagct ccgtgtgacc  3240
cacatggccc caggccgggg gacaccagag gctcctccat gggcagcagg agtgagcgga  3300
ggggtgtgtc ccacagcgac tttcccagcc gatgccacgg tggagatgac agccccaggt  3360
ctggggtaca gagaccactt aggatggcac agggtggctg gccccggatg ctgagagctt  3420
ggtttcattt gaatttttctt ccccaacctg agtgctttga caacaatgga aatagagaag  3480
tggctgcttt cttttggtga ccctccaggg gtggaatcgg agtgtgtctg cccgccccttg  3540
tgacagacac acggaaggct tctgacgctt gtggccagac tgcaattgca cttatgtgtt  3600
```

atgctactaa tatttgaaac agacctgcca ttccatttgt taatt　　　　　3645

<210> 670

<211> 3978

<212> DNA

<213> Homo sapiens

<400> 670

caccgtctcc atcccctccc ttgctggcca gccagttgat aaacattgaa tttggaagat　　60

gccttgggat ggaggaggac cagtgcccag gcctgcagcc caccctcccg ctgggaggcc　　120

cctgagagca ctggggtgct gctgccctgt ttctggggac gcttggcttc cctaccagcc　　180

accgtctcct gccctccatc agctcggctc tagcctcggg gcctctcggg gtggtgtccc　　240

cggtgacgtg cctgcctgcc tgcctgccgt cagagagctg gcggggctga gggaaggaag　　300

cctgcctccc tggcaggcaa gcaggcggcg ggcgcggaag caccagcttt cacgtctctg　　360

gcagagcccc actccggctg cctgctgcct gggggatgtc caggggccgg ccccccggctt　　420

ccgagaggga cagcgtgcgt gggtgtgggg gctccggtag cccggcagcc ctctgtggcc　　480

ctggcccagg agagtgcagg ttttctggga gggctgggag gaggcggcca ggagtgagga　　540

cagggaattg tgagcagtgt gggggcacca ctgtggggaa caaagccccc cgcccctgcc　　600

tgaaacctgc gtcctggccc tgggcatcag ggctggccct gccctggtgt cctcacacag　　660

tcacttctgt gtgcggtccg cgtcctcagg tcatgaggaa ggtcaccctg ggctaggccc　　720

acctttgatg tcacggtcac ctcacttatc tcttcaaagg ctctgctgtt tgggcttcct　　780

tccattggct ttggcagggc aagcctggct cctaacaccc tccgtttgtt ggagctctca　　840

ggctgcctct ggggaccgtc tgccaggaca caggccaccc ttgctgcctg gttccccact　　900

ccccaagcca ctcacctggc agggcgtgac tggcacttct ggcctgagtg cctgctgggc　　960

gcccgccect agccagttct gtcgtccttc ctttccaccc aggacagccc cgtcctgcac　　1020

tgccgtgtcg cccactgccg gggcctctct gggaccaaca ggccccttc cttccaccca　　1080

ccaggcccta ccccacctgg accctctgaa atgttcctcg ttgacaaatg gtcttgcaga　　1140

aggcaggatg gctcctgcag cccccactcc cgctctgtgg gtggatgccc cgtctctccc　　1200

●

```
tgcccaggca ccgtggtgcc ttctctctcc cgggcaccgt ggtgccacct ccctcccaga   1260

caccatgatg ctgcctccct cccgggctct gtggtgccat ctccctgccg aggcactgtg   1320

gtgccgcctt cctcccgggc acggtggtgc cgcctccctc ccaggcgctg tggtgccgcc   1380

tccctcccgg gcgtcttgag ctgcaagggc tcctctcttg cttcgttcc ccggagggtg    1440

gtgctgttct cgttggaggg ggcggccagg cgctgggcca cgtgtgcatg cagcccctac   1500

agagttgctg ccccgtgggg gttgacgtgg gcctcctttc ggaagctctt cctggcaaca   1560

ctgagtgggg caaggggttg gcagcagaga ggcggctgga tttggggccc cagtgtcctg   1620

ggcggcagct agggaggggc cggctccagg ccctcaggct gtgtcagggc agggcgggca   1680

cccccacttc tccctgtcag ccgagggagc caggcagggg cagcctgaga catcctggga   1740

cagtgctggt ggggagaggc ccctcagcct gtgcctccct caaaggccct tcccgggccc   1800

tgctctggct gggggggacgg tgtgacccac tttcccttc cagccccagc ttggtgaccg    1860

ggtggctcca ttcaccctgg gtccctcgct gaaacggtgc ctgggaccag agcagggaac   1920

acgcttgcca gtggtaggag atggaggcga cgtggactct gggaggcttc ttttttgggg   1980

tccatccaga ggccgagcct ctccaagcac tggtcagcct ccatgccacc cagtctgccg   2040

accctcctct ccaccatccc ctcgtccgag cagtggcgat ccctcccgag tcaaggctgg   2100

gcacaagcac gtggggacag gccgggtagg ctgcctggct cagtgctccc tgcacagagg   2160

cgcagacagg gagcccaggt gccccaggcc tggctgccaa gcctacttcc ctctcctggt   2220

gttcccgagt cctgcccgcc cctttctgtg cgtcccgtgg ggcagtgctg gttgggggtc   2280

ctggcctgtg ggggctatga tgagaaccag gtgcctctct gcatcggtgg cctctgaggg   2340

agccctctcg cccggcagca ggtgggatgc agatggggct ggccagggct cctgtgccca   2400

cagcagcctc tgggcagtgt cccctgggct tctgtgagca gccgcagcct gggtgtgaat   2460

cttggaggcc cggtggtggc ggagcatgct ctccatctgg gagaggctga gaccatggca   2520

gctcctggcg ctgtcctccc cgtgccccct tcctggctcc ccagcttccg gcgcctctcc   2580

agggccactc gggcagcccc tgcccacccc acaggccctt ctctgctcac aaggctttga   2640

tcccaggcgg cacaattggg ttttcaaagc attcacggcc cttgtttgtg tccctgggcc   2700

cccggctgga ggctgaggtt tcggcgttcc tgggcctggc ctttgaagct tcctcttatt   2760

aatcttttaa catcccccag ccccactccc acccccagcc tgtggccctg agcagcctgg   2820

agccgggagg gggaatctgg agctgggagg gggataccccc agcctggcag ctgcacccct  2880

ccacggtggt cccggcgcat ccgccgggac ccgccacgcc tggccccacc ttcctcgggt   2940
```

```
gcagaggcca gaggagggag gacggtgatg ctgcatggct tgaggaccct cgaggcccca  3000

gccttcagct ggcttggggc ttggggtggt cccatggagg gcgctggtcc caggacgccc  3060

tggccttgct tacaggggta gggctggtgt cagacaggaa gctgggcgat gggctcatgg  3120

gggccgggca ggcagagcct gtctgagggt ggagctgggg cctggccctg ggggtgtagc  3180

tgccttcaca gcagggggt gctctgccca cacccggccc ctgagccccc cgccctccct  3240

gcaggcgaac ctcttcccgg ccgctctggt gcacttggga gccgaggagc cggcaggtga  3300

gtgtcagtgg ttggggccag tgtcggagtc cagccagcct gtccctggac ctcagagcca  3360

gctgcccggg agggcgttcg gtctggggcc tcctttgggt ctgagaggga gatctgcggc  3420

ccccagtaac cacctccccg agagaggact gggacagcca cctgctggcc acccccctcc  3480

cagagctgag tgctggtggg cagatgctgg gtggatggtg agtggacccc tcctcagagg  3540

ctcagggtga gcttgggcct ccctgcaggt gtctacctgg agcctggcct gctggagcat  3600

gccatctccc catctgcggc cgatgtgctg gtggccaggt aagtgccggt gggtctgggg  3660

gcacctcccg tggcggcact caccactctg tgtcttcgcc tccccacagg tacatgtcca  3720

gggccgccgg gtccccttcc ccattgccag cccctgaccc tgcacctaag tctgagccag  3780

ctgctgagga gggggcgctg gtcccccctg agcccatccc agggacggcc cagcccgtga  3840

agaggagcct gggcaaggtg cccaagtggc tgaagctgcc ggccagcaag aggtgagagc  3900

tgccagcctg aggtgcccac tccgccagcc acaggaccac ctcctctgcc agcaggaata  3960

aagacttgtg catccctc                                                3978
```

<210> 671

<211> 3871

<212> DNA

<213> Homo sapiens

<400> 671

```
agctacgtgg tggctcgcct ctgattcccc gtgtaaaaaa tggagtttag gatccctgcc   60

ctgtgtgcag cccacagcct caagccccca tggggatgga atgccggaaa cctctggcca  120

gcgcactagc agcctggaga atacggaaga ttgtggcagg attgtggggc acatgggcag  180
```

●

```
ctccctgctc gtccgggccc ctggtgccca cgagaaaacc aaaacaggtg cgtgccccgc   240

gccgcacgtc aggagggcaa gactcagtgg agggaggggc tgtccactcg ctctagctcc   300

ccagaggctg aacagggaga actgggaaaa aggacgcctc ctcagcgtcc tagaacgagt   360

cctcggcacc tggtattgca tgcgccctag tatggggccg ctccacttgc gcaggtgttg   420

gcaacatgcg gggagcgcca cggcatgccc ccaatgagcc gactccctcc cccaactctg   480

ccccctttgt ctcgctggcc cctactcctt ctgtctgcct gtctgtcccg tcccaggttc   540

agcgcgcacg gccctgccgg ggtccctctg gcagttgccg tagccgcgcg gcccgacccg   600

gggctcccaa gaggagaaaa aatcatgaat gaaatggatg cgctgctccc actcctccgc   660

cctccttgtc caagcaacct tggcatgggg gcgacgactg cggagactcc gcgcagagtt   720

gctcgggaga gggaggcacc tgagatgagg tcaggggtta agggtctgtg atccggcccc   780

cttcgtgccc cgggagcagg ccgctctccc ggtcccccgc cccgccagcc ctgcgcaatt   840

cccggcgagc ggcggaagcc cgcccggggg cggggcggag ccggggctgg ggggtgccaa   900

acccacccgg cggctgcgcc agcgactctg cagctgaagc gcatttggtg aggcggtcgg   960

gcgagggagc gcgcacggag cgcgggacgg agcgccaggc ggacggaccg aaggacggag  1020

gcaccgaagg acggacgccc ccgcacacgc agacgcacag agctcggcgc ggcccccgtc  1080

gcatacacac tggcacagac acaagcaggg acacacgcag acacacgcac actcgcgcgc  1140

gcatcctccc gccagcctgc ccgcctgctc gccggcgccc ggagcccgct ctggccgctt  1200

gctttttgct gagaaagctt cctgccctgg aagatggcac ccttccccat ccagacacct  1260

tgggaatgaa ttatgaggga gccaggagtg agagagagaa ccacgctgct gatgactccg  1320

agggaggggc cctggacatg tgctgcagtg agaggctacc gggtctcccc cagccgatag  1380

tgatggaggc actggacgag gctgaagggc tccaggactc acagagagag atgccgccac  1440

cccctcctcc ctcgccgccc tcagatccag ctcagaagcc accacctcga ggcgctggga  1500

gccactccct cactgtcagg agcagcctgt gcctgttcgc tgcctcacag ttcctgctgg  1560

aacccacggc ctggcttgac tctgggacgt ggggagtccc cagtctgctg ctggtctttc  1620

tgtccgtggg cctggtcctc gttaccaccc tggtgtggca cctcctgagg acaccccag  1680

agccacccac cccactgccc cctgaggaca ggcgccagtc agtgagccgc cagccctcct  1740

tcacctactc agagtggatg gaggagaaga tcgaggatga cttcctggac ctcgacccgg  1800

tgcccgagac tcctgtgttt gattgtgtga tggacatcaa gcctgaggct gaccccacct  1860

cactcaccgt caagtccatg ggtctgcagg agaggagggg ttccaatgtc tccctgaccc  1920
```

```
tggacatgtg cactccgggc tgcaacgagg agggctttgg ctatctcatg tccccacgtg  1980

aggagtccgc ccgcgagtac ctgctcagcg cctcccgtgt cctccaagca gaagagcttc  2040

atgaaaaggc cctggaccct ttcctgctgc aggcggaatt ctttgaaatc cccatgaact  2100

ttgtggatcc gaaagagtac gacatccctg ggctggtgcg gaagaaccgg tacaaaacca  2160

tacttcccaa ccctcacagc agagtgtgtc tgacctcacc agaccctgac gaccctctga  2220

gttcctacat caatgccaac tacatccggg gctatggtgg ggaggagaag gtgtacatcg  2280

ccactcaggg acccatcgtc agcacggtcg ccgacttctg gcgcatggtg tggcaggagc  2340

acacgcccat cattgtcatg atcaccaaca tcgaggagat gaacgagaaa tgcaccgagt  2400

attggccgga ggagcaggtg gcgtacgacg gtgttgagat cactgtgcag aaagtcattc  2460

acacggagga ttaccggctg cgactcatct ccctcaagag tgggactgag gagcgaggcc  2520

tgaagcatta ctggttcaca tcctggcccg accagaagac cccagaccgg gcccccccac  2580

tcctgcacct ggtgcgggag gtggaggagg cagcccagca ggaggggccc cactgtgccc  2640

ccatcatcgt ccactgcagt gcagggattg ggaggaccgg ctgcttcatt gccaccagca  2700

tctgctgcca gcagctgcgg caggagggtg tagtggacat cctgaagacc acgtgccagc  2760

tccgtcagga caggggcggc atgatccaga catgcgagca gtaccagttt gtgcaccacg  2820

tcatgagcct ctacgaaaag cagctgtccc accagtcccc agaatgactg cgcttctcct  2880

acaaggttct ctgggcactg cccagcctga gtctcggccc tcacccaggg ccctgcctcg  2940

ggtcctgggc ctgctccccg cttcctcccc ttcagtcagc tccctctgtc ctctgtcagc  3000

ctggcctgac ccctaccctc cagcattgct cttcctactg tacatattgg ggagtggggg  3060

gcagggtcgg gaagggacat gccaggccag gcctgggggcc ccggggcctg acccacacca  3120

cgcagacccc gggctccagt ttttaacgat ggttccatca atacctgatc cagaatgttt  3180

ccgtgctaca ctttgtgtcc tgctgcaatg tgttctgtct gtccatccat ctctgccctc  3240

tgtaccggac actgtgtctc ctcagccagg aaggggtaat gagctccagc ccctaagcaa  3300

ccggacttgc ctgcctcggc ctcacccgca cttctcccaa aaggcagatg acggggagtt  3360

aggcatgggg agctccagaa ggtcaccaga gagctttcag ctgagggaga gttctctagg  3420

ttggagtggg catcacagcc agggtggcct ctgggtgtca gatgctctca ggagggtgcc  3480

cagcctgtga ggcactggca aggtaggggg cagatggggc atggagaacc cagaggatct  3540

aggccctgtt ggggagggga ggggagctca aggtttgggt ggggactcag cccagatcta  3600

cgtgagacat ttttctgtgt cactgtggga aagccttccc agaagtctca ctgcgtgttg  3660
```

ctctgcgtgt gttcccatgt ccatgcgtgt gttgagagcc catcaggagg gcatgcatga 3720

ctctttggca acatgtatta tcttggagcc acgtgttttt attgctgact ttaaatattt 3780

atcccacggc agacagagac atttggtgtc tttttataat tcgctcgtgg tcattgaata 3840

gagcaataaa cggagcattt tgagcaaaac t 3871

<210> 672

<211> 4656

<212> DNA

<213> Homo sapiens

<400> 672

ttttccaggc taatgaataa gtaatgtgga tgtggaatca gatttttgct tgagtctggt 60

ggtgactcaa tataatacac acagaaaagt atcagttctt ctgtttcaag caagcatact 120

atctctggtg gccttcctat ttttgaagtt gctgttagga tactttaatc cttaacatga 180

atcagtataa aagaaagcat gtgggtggtt gtgtttgggt gtcgtttcca tccacttggt 240

gcttttattt tctgtggttg ttttattcca cagcttagca acagcagatt tccaggagaa 300

gtcttagttc ttcatctctc tctccttcct ctggtctggt tggttggtaa cagtgagagt 360

aaatgaaatg ctttttgttt ttctgtcttc ccaccacagt gtctttggtt tacttttagg 420

accctcattt tcaatctctg agccagaaga cctgccttta aatcacagca tttcaattcc 480

tccctcctat ctaggcattc ctttatgttt ctacagtact ctgcatgcat ccctgttata 540

aaatgtatca cattgttttg gaattttcca aagttgagct ctctttctaa ataaactgta 600

cttcttgagg ccatggacca tatttttatc atttatacat ttctgttacg taacacaatg 660

cttggcaatg gtggttgggt gactggatgg aagaatgaat gaagtaggct tgaagagagc 720

tgtacttatg atcctattat atatgatttc tcttcatttt gtccacgtta atgatttcta 780

gatatcttgg tcacttgaac tttagtaata tgaatcatgc tgtgtattca aacttttta g 840

cagagaaata ataaaattcc ttttgtaaac caaagattgt acaaccatct gtgttttgtt 900

ttgttttggg ttttttcttt ctttctttct tttttttttt tttttttttt cccaaaatag 960

gttcaaaaaa caaacaaggc taacttgcac ctaagattga ggagttttga tgcagtagag 1020

```
tagtaaactc ctgtattttc cagcttgcta ttgtaaatta aaatacctat ttttgaaatt 1080

ttaaaatatt tatacattga tttcaataga agtataaaag agggagaggt agttctttta 1140

agataataag gaagatgtgt tatggctcaa ttcttgatta ttattgcgac tgtaagcaat 1200

ataagcaact ctgaatggtt tttaagactt tctttttctt tttaggacct ctttgttttt 1260

agacatgaat tggccataat gagactagca gcctttatgg gcattactat gttagttgga 1320

ataactggac tcttttacac tcaactaatt ggcatcatca cagatacaac atctattgaa 1380

aagatgtcaa actgttgtga agatatatcg aggccccgaa agccatggca gcagaccttc 1440

tcagaagttt ttggcactcg ttggaagatc ctgtggttca ttcctttcag gcagaggcaa 1500

ccactgcgag ttccctacca ctttgccaat catgtctaaa cagatggatg gtgggcacag 1560

atgggtcctc catgctggca atgcgttaca ggttttatga aatagaact atgacagtct 1620

tcaagtcaat taaaatccac ccaccaatct taggcatcat aatgtgcccc aggctttatt 1680

ttaatagtga tcttgatcct gttgtgggac taatacaaga tctatattta agttttaaag 1740

catgtttact ttcaaattag ctttccacag ggatttcttg aaatgctttt gttattaaac 1800

tcaaaaggca gtgattagga tgaaataatt gtacataatt tattttagta ctgacagtgt 1860

tacagattct aatttatggt aaatttcaga tgtttattta aaattttcac ttttaaacag 1920

taaccaaatc taaatttaat tattcaggtt ttacaaaagt tgatacacct tcttatagta 1980

taggtaaatt ttctttttca aatccatttt aaaataacct ttcctttaa atgtgctgca 2040

acgtttttaa aaatgcagca gcataggagt gaacaacagc aacacaaaac gggcattggt 2100

ttcttaggag tggcttgctt acgtttttctt cttttttctt caccaaaacc aacatgaaag 2160

taccactgaa gtaaaacacc aactacctac cttactataa aggaaatgtt aaaatttttt 2220

tcacaataat ttttttcaatt ttcactatta ctgttgtaat tattgattgt gattaaaata 2280

tttgctccca ggagaactcc tgaccagtgg gcatgtattc ctattttatc ctaagatttt 2340

aatgagcaaa aaggggagag aatttgcaat aacttcacaa ttacctttc tagtgcagtt 2400

atattagaat gcatatgttt ttaaaatgct agtataacta gatagtatat aatgtacagt 2460

ataagagga atattgtgct tttgaaaaga gtactttt tacttttatt tatgtactag 2520

tagatgtaaa atttcacatt gaaggtttat atatattggc caactcatat agaaatttta 2580

tttataggaa gctactacta aaaaaagtca ctaactttgt gtacctataa tccctaaatt 2640

aaaattaaat tttaattggc tggctgtaat ttgcattgag agacctttta ctagtagcta 2700

gtgttaggaa gtgaacctaa aataagaaaa tataatgatc tgtgtttatc attagccttg 2760
```

```
tacaaatgta aattactaat agtgatgttc ttttgcaagg catagaacat ttgtatgaaa  2820

agacatttag tatgctttga aaaaaactca gcttttagtt tttttccatt agaatactgc  2880

aaaacccata tatctttta aaaaatttat gtactcacag tctttccctt gaagagaaga  2940

ttgaaaaagt ctactgttca taaaccatgc taacattttc cttttagcta gttttgaaag  3000

taaggaacaa tacctgggaa ataataaaac agaaggttac cattgtcagc cagttggcta  3060

tactgtggtt agttctttca gaaattgtaa atatcttgta gcatattctg aaataataga  3120

gtaagttctt ctcagagatg ttaatatcat gtttttcatg ttctaattag aatactttat  3180

tacttacaaa ctcagaaata cgaacagaaa tacagcagac gaacatattt attggtactg  3240

aaaagagatg tagtaaatta aatagaagaa atatatttat aaagcttagt gaaacacaaa  3300

attagaatgt tcatgtcagg cacaagggtt tggattttgt gcaagctaat ttggccacat  3360

ttggcctggt gacagaactg ttcataagga agtaatatat agataaggta ggtagatatc  3420

agttgaatgc cttatattgt atacattcct ttcaaataaa gaccttgaga aaacagcaga  3480

gccaagtgaa gatcacctaa agaactttgt ggctaattta tacttcatgt agtagcagtg  3540

ggtactgggc agggtctctt tcccactctg atgatttgtg ctcttatttt tcctagattt  3600

acctcatcta gggcatattc ttttccctct tcctctttac ctttcctggt cctgatccct  3660

ctgtactcag ttcccctaaa ttattggact acaaactaat atactagaaa agcatacact  3720

tattttattt gaatgcagaa atgctgtcta tcagtatata tacataagaa tgtatattac  3780

agtatatcta tatatactta acactgtaac tttcagtatt ccccagttag cgtacctaac  3840

tctcctgtgg gttttgttaa ttcttattag actactagag aaaaaccaac tggcagtttg  3900

ctaagcatat ctgctggtgt tgtttctgcg ccctctttg gctaattgat gtaattatac  3960

tggctctaaa gatttactgc cccataagta aatagtatag ccacattctg aacatatcaa  4020

aagtacaaac ttaggaggag tgtatgtaca aaaatgtaaa attttatgaa aatgaacatg  4080

tttttatgat gttatttcta gttcataaga atgtgatgac tgctttgctt catttatgta  4140

cgttcccatt atattcttgc tgtcaatcaa tcacaaattt atatcagatt aggataaact  4200

aagccatttt atgtatttta ttttaaacct tattttggca gagtaattcc ttagaattgg  4260

aaaagctgtt actttgaaat taccaattta ttacaaaaca tagaaatgta ttgtagctac  4320

aaagacaacc aagcattttc tgtgttttaa tgaatatcta aaaaactaca tttagtttat  4380

tttactcagt tttgaaatga ttttttact ggctctattg ccttaaaata actaagagat  4440

taatgattct ttgtataatt ttccttttct ttgttctttt tttttacatt tcgcagagtt  4500
```

atatctatag ttttagtaac aatttcttat gtattctgga taactgaaaa caactaaagg 4560

tgttgggcgt tagaaaataa ttgtgagcag taagattact gatgtaatat gtatgttgga 4620

ctgaagtatt tctttataaa cattctattt gatttt 4656

<210> 673

<211> 5477

<212> DNA

<213> Homo sapiens

<400> 673

tttatttttt atggagaagg ggtctcacta tgttcccca agctggtctt gaactcctgg 60

acttaagcaa tcctcccacc tcagcttccc aaagagttgg gattaaaggc gtgagccccc 120

atgtccggcc aacaagactt cctcgtgact ataatgtgag cataatatta atagctctga 180

gagagagaag tgaaccagaa gaccaacctc agtgtcagga agtctgggcg tctgtcttct 240

gcatggctga agacatgggg ctttgggcaa gtcatctgtt ctctttgaac tttggcttcc 300

tcacttctga aataggaggg tcagagaaga tgtttctttt tgctgaaaag ttttacagtt 360

ctctgatcta taccccttgg tcacacacaa ccaaaaagta gaaaacatga gtgcaatact 420

tttccaccag tactcccagt ttatacatta tcttctcaaa ccaataagga acttctacaa 480

ggccctgtta gtgatgtgtt acaggtgcca gcattaggga aactttcaga ctgttatatc 540

tattcgttcc ttcatccatg tatactattc attctgtatg cagagtaatt tatatatgta 600

caattacatg gcagtgaaag ataatcagaa aaatgaagat tttttttttt tttttgaga 660

tagttttgag acagagtctt gctctgtttc ccaggctgga gtgcagtggt gtgatcttgg 720

ctcactgcaa cctccgcctc ccgggttcaa gggattctcg tgcctcatcc tcccgagtag 780

ctgggactac agacatgcgc caccatactc agctaatttt tgtattttta gtagagatgg 840

ggtttttgcca tgttggccag gccgttctcg aactcctggc ctcaagcgat cctcctgccg 900

gcttcccaaa gtaccgggat tccaggcatg agccaccatg cccagccaga aggttttttt 960

ttaaaaaaca cactcctgaa ctaacaatta caaagagcta gtgacaattt cccaaataat 1020

tatgcataac aggagcccat atattgttct caaatcataa accataactg attttgagga 1080

aaagacattc tgtcccactg atattctttt catgagtaag atctggatct gtctggaggc 1140

acagaattaa tttttgcatg aggaatccca accctaccat cattccatgg ctgaggaatt 1200

ggttattact cctatgggaa attgggaatg ttgttggtac cccagccttc tcttaagaca 1260

aaatttaaca aatgcataca tgctaagatg cttatactca taaggctttg tgggtctcct 1320

ttctaagggg aatttgaata ctaacaagaa caaaggctaa ataccaaaag ggggctttct 1380

aatggtagaa gttgggatat caggtagcca catagagcag ggctactttg ggggctggag 1440

actgcagaaa cccttcagtt tatacgtgtg agtaaaccta atcacacttg atgtattgct 1500

agtgaagtcc cagccccctg agcctttgca gaaacccaaa gaatgctaaa aagggcaggt 1560

tttagttcct gccaattatt tcatttacta caaatgcccc gagttccgaa tttacttccc 1620

tccccaccag aaatatgtca ttttggaggc ttgtgaaaat taagcattaa gaaaatcccg 1680

ccttcatcct aatacactgc atccacaagt cccaaacaaa atcacttcct tggcctacac 1740

acataactac ctgtttctgt ttaggtctgt gactcagaaa gtgcctggaa gaagtcatga 1800

gagggagtcg atcccatctt acctgccata ggaagaatag ggcctgctca gtagagttca 1860

gtgtgtgtgt tgaaggtggt ggttcttagt ccttccctga attcactaat tcgcattgca 1920

ctcactcttc ctgatcaatg agttattgct gagaaatcat tgtagtaagt aatacaggta 1980

tccccagtaa agccatccct ctcctccata cctccgctgt cccttgggtt ttggctccag 2040

gatccttgcc ccatgtccca aagaatccct accttgggcc tccctcctcc tcttttgtca 2100

attgcacttg accttttcag gaaaaagaaa tcaattgata ccttagtcct aatgtttgac 2160

ccttttctat ctcagaatag agaagtccct gtatttgttc tttttttact caagtttaat 2220

atagaccacc taggcacaga agctccgtgc tatattctgt tgcctgtaat tgtccttcca 2280

tctaattggg aaaaggttac tctattgaac catctgctga ttcccttacc ttttcactct 2340

tttgtcagta ttcctttacc agtaaattct tggttatcta ggtcctgaag tttcattcat 2400

gttttttta aaagctttaa tttttcttag gaaaactgtt tctctcatct taaagcagac 2460

tatgatcttt tctactttgt tatacaatct gaacataatg aacactctaa agtcaggcat 2520

ggattttatc ataaaagcag atcgtattaa gattttttta aaaaagaacc aggattgagg 2580

aatctgtagc taataattta ataattcacc agcatgtttt gggctcccac ttcatgctgg 2640

ccactgggct aggcactgag ggtgcagaag caaacaaatc agcctcctgg ccctcagatt 2700

tgcattccag tgagtccatt cataaaacct aactcaaagc cagcaacacc cccaaaaggg 2760

ctgttggaag ctttgtagct catctgtaca gctgtcttga ttcctgtacg ggatcttact 2820

```
ttcttgggaa aatatgttct aaatcctgtt tccttgggcc attaaaaatc catgctgtcc   2880

ctaatcaata tatagttatg tgtgaccttc ttagaattaa aaaaatgccg ctggacagcc   2940

tttgaaggga aaggcagaga aatctgtttt gatggcttga aaataagtga aaaggttttt   3000

agggaaagct aacaagcttt caaagatttc agatctgcca gcattcattc attaaggcat   3060

gggattaggc caaaagagcc tcctaccaag ggagagacag gaaccatgta aggagacctg   3120

tgagaccgca gtggaagagt attgaaatag aagccagacc tgtagacgta tttgttaata   3180

tgtgtgccaa gccaaagtac aggaggaggc ttggaggcat ggagttgtgg tggaagcagg   3240

ttctgaaaag cagaactctg aagctggctc attctcacca agtcatctgg cccagcctcc   3300

cgcctccaag cacatcctgc ctgcagaggg tctggctagc tgccttttca gctctcgagg   3360

gatagagatt ctacaacctc cctctgtcat cagttccaga gccactcccc tttgcactag   3420

aagttcttgc tttcaaagaa tgagggtgtg agggaggggag gggtcaagaa acagagtgac   3480

aggggaaaca ggcagaacaa gtcagggcaa aggaccccag catgaagagt tgtggaggtg   3540

gaggtggggga agcagcctca catctcacac ttccttcctt ctcttaaatg tgagcagctg   3600

actccaagcc ttgtggaaac tctagaaggt agaaccagcc atctggggaa gctggcctta   3660

cagatgcccc gtctggcata gtggaggttc ctgtgctctg agaacgcagt gtgaatctag   3720

acatccactg cagcctggga agagctgtgt tttcttcaaa agtctttaac tttcacagtc   3780

accctctaa agaaatgttc tctgattgaa ggcatgcttc tattcctact ttattgtgtt   3840

tcatgcattc tgccagagta attacttttc ataccaattc ttggatgcag agaaatctct   3900

ggtagtctaa ggggatttcg atccaagtaa agctactatc tcctattcca tccagacttt   3960

tccgtctgcc tccattctct cagtcacata cctagaagca agccagaaag cctgtccaac   4020

caaaatcact ctccaaagcc caagcacttt attgttctcc ctgtctgtta tcgagccaag   4080

gtgtatttgg cctcatttta tgccattagt tgtctggctt tcatggctct gcaccacatt   4140

acagtcagag caggaaggcc agcagtggag atagaattat ggcagaaacc cagagtagag   4200

gcctctgctg gtgagggagc ctgcagcact ctccacgctg gtgggtccta gcatgcccaa   4260

cagacccccca tcccttccca tcagccttgg gccttgagtc tcattccaac tcatcccctc   4320

ccctttccct tctttccagt cccaggtgac acttgatgcc tctgactcct ttgaagaggg   4380

catcaagaag tgaaagaaca aagtcctttt ctgttcggga tctgggccca tcctgggaga   4440

ggttttttggc agaaatggct gcagtggaac cctctgactg ccagggtgaa atagtgctcc   4500

agcaggctgc ggtagactcg ctgccagagt gggtcaggac tggcccagag gacagggtcg   4560
```

tctcttgaga gtcctcccag ctccagggcc tgattttaaa gcagtaacac gaggatatag　4620

gttatataca ggctcctgga aggcaggtgc cgcagctcct gtgacacccc atatgcctga　4680

gcaagcttct ccagcacaag agatgatgca agtatgaatg ggtacggggg gagcttaaaa　4740

cctgccaaca ctgagacttg atgccagggg ccatgcaccc gctctgccac ctgctaggtc　4800

tgtgcaatgg tcagagcaga ggtgtgtgat gagttcagct cccaagcaca tccacactta　4860

ggaagtgttc tgtgtgtttt taaataatcc ttaccatgta aagattgtat tacatttgta　4920

tacaaaattt ttttgcattt tacttttgta atatttgggg ttttatagat ttttatttta　4980

tggccaagta tacttttgta aggaaatgtt gaagtcttga gtatttttat tcttttaaaa　5040

aactatagtt agtgtcaact gtgagcactg ataaatatta ttcatgtgtg gttttccttc　5100

tttttaatcc agactttta agaaactgtt ttggcataga gctttactta aaatgctgct　5160

tcattttaca cattgtgaat actgaagatt ctaaaaaata aagatgcatt taaaatctct　5220

gtgctgttcc attgtagaaa tggtaatgtg cattgctttg ccaaagtggt aattaaatgt　5280

ttaatggttt agaactccta gttcacaaca gggcttctcg tcatcacttg cagcgtgtga　5340

gcttccaaat aagccgccat ttctttggaa aacgcacgca cttaggcatg gcgatctcct　5400

gttccgttag gaaatacggt tatgttgaca ttatggttac tgtgcttgtg gttttgcaat　5460

aaacatgtat tgaaagc　5477

<210> 674

<211> 3828

<212> DNA

<213> Homo sapiens

<400> 674

tttattttta tttatatttc ttttgagata gtcttgctct ggttgaggct ggagtgcagt　60

ggcgccatct tggctcactg cagcttccct agctcaagcc atcctcccac ctcagcctcc　120

tgagtagctg gggaatacag gtgcattcca ctgtgactgc tgattttct ttaacttttt　180

tgtagaggtg gggtctcgct atgttgctta ggtttgtctt ggactcatgg gctcaagtga　240

tcctcccacc tcagcctccc agagtgctgg gattacaggt gtgagtcact gggcccagcc　300

gagaaataaa tttgaacaga gcattctgta aatggaactt atttgtggca cccttgttct   360

gtggtatgct agtttgaaaa attctagcct acaacagttg atatgcaggc cctgctgctc   420

tctgcccgtt ttttgagacg gagtctcact ctcacccagg ttggagtgca gtggcacgat   480

cttggctact gcaacctctg tctcccaggt tcaagcgatt ctcctgcctc agcctcccta   540

gtagctgaga ttacaggtga gtgccaccat gcccggctaa tttttgtatc tttggtaaag   600

acggggtttc gccatgttgg ccaggctggt ctgggactcc tgacctcagg tgatccaccg   660

cgcctggcct gttctgtgac tttcgacaaa gcaaacaatt tttggtttct tggaatttca   720

tttctcccca tttaaaagag aacgtccccc tccatcgctt tcatgcaaga catggaccta   780

cccttagcgt ggaaattgag cttggaagta aggtagtgtg taaagactag attgattaaa   840

attctggcct tgatcacatc ctcttacgat tcttctgggt tggggggaggg tatgctgttt   900

taattctacc agaatgagaa gaatttttgc tgctggaatc aacataaaac ttggatgcag   960

cgtgcggcag actttggaaa gatctttcac tatagcttgc ttggataaaa ctggttttcc   1020

catattccta tccctgcatt tctttcatct gccgtgagat tgtccttgtt agtcaagtca   1080

cagcatagct gatggggtaa tagtaggaga acttaagcag gcttcctggc gtagagcagt   1140

tgggcctttc tgacaagccc attttcagtt tctgtgggtc aatctctgct tttggaagtg   1200

tttttcaagt gtgcctgtga ttttagagca gattttgtga gcagagggtc ttcagttagt   1260

ggacatcagt tagtggactt tcttcagtag tgttttaggg ctggcatgta gttgagtgat   1320

ggcagccctt ggcgagcttt tacttgggag gatcattgtt gccatgtccc agtagccacg   1380

agatgagata attgcaggcc ctttgctctt tctgccttcc atcattctgt cagatttgtt   1440

tggaaaaatt tgtctggggc tgtaggacat tgtttcttgg aaatatgtaa cggtacttca   1500

ttggtgggag cagcgttctt agttcagtgc ctggacagcg tgttccttag atattctaat   1560

aatttgtaga gcttcaggat ttgagaccct atgattttat ttcagcctta ttatgtaaga   1620

gagggttggc tgtagtctct cttgtcgaga cttgatctct aggctatgta aaatctgatc   1680

atcctggaca gctctccagc caacagggag cacgccagtg cctgacact gccatgtatt   1740

gccttgttcc atctctttgc atgcctttgc tttttctcct aggcaggcgt agtcttactt   1800

aggtgtattt tttgaaaagt atgtcaagca ttgtgcacag aataagtacc catctgaatg   1860

ctgggttggt tggtttggag gactgtttat ttatgaatgt catcttgtgt tactcagttt   1920

ttctgttatt ggtaaagtga agaatgtttt tgttgttgtt gttattttat agtgtggggt   1980

gatcagcccc agatttgacg tgcaactcaa agacctggaa aaatggcaga ataatctgct   2040

tccatcccgc cagtttgggt aagttggcct ttccttaatt aaaagaagtt aatgctaaga 2100

atttctgtgg tgcagtttga cttaaggggtt ttttcttt tttctgtta aaacaaagca 2160

gtggtaattt gtctactctt aaccattttg acctaatagc tcaagtgtta tccatatttc 2220

ttttctctct ctttaaaaag agacagggtt ggccaggcac agtggctcac gcctgtgatc 2280

ctagcatttt gggaggctga ggcaggcgga tcacctgagg ttgggagttc gagaccaccc 2340

tgaccaacat ggagaacccc gtgtctacct aaaatacaaa attagccagg cctggtggca 2400

cacgcctgtg atcccagcta cttgagaggc tgaggcggga aaatagcttg aacccgggag 2460

agaggttgcg gtgagctgag attgtgccat tgcactccag cctgggcaac gagtgaaact 2520

ctgtctcgag aaaaaagaga gagagacggg gtttcacttt gttgcccagg ctggagtgca 2580

gtggctgttc acaggtgcgg tcataacacg ctacagcctt ggcttcttgg cctcgagcag 2640

tcctccccgc tcagcctctt gtggatttgg gaatacaggc gcctgccacc gtgcctggct 2700

atttgccaca tttcatgtgt tgagcttcag gttctgagag gcacatgaga gcttagactg 2760

gcagaaaagg ggggtcgtgt ccactttcat gtctgccctt ttggctcact gcagatagtt 2820

ccctgtgatc ccagatgagg gccagaatca gttctaagcc taggcctttg ggaaaactta 2880

gtttgggagt ctttgtcctt aaaagcctat ctgagttcaa acccttgttt ttctgcttta 2940

aagccatgag atcttgggca agtcacagcc ttgatttctt catccgtaaa agtggtaata 3000

gttcctctgt ttatcacctg atttaatttt ggtaaagcac tttatgagct gacacagtaa 3060

atgtgtatct ttgtggttaa gaatttatac cctccaaatt atgcgtctgg tgccttggtt 3120

gaaagtattc tcacttcatg gttgctgtat tacaggtacg gtattctcac caaaatcatt 3180

tctctttgta attatgatac tgattttaat gccgcacatt tgcatactat atgcttgtta 3240

cagtgatccc cacagtaact catgaagcag ccactcattg tacaaatgaa cgtctccata 3300

taatagttta gctattatac agtacatggc agaaacacaa ttcaaactca agtttatacg 3360

aatactttca agtctcctta cctgagagca gaaagtgaca tttaaattta aaggagttcc 3420

cagcctttgt tttcagtgca gtttgtttca tggtgtaggc agaagtcagg gctgtgtgat 3480

tgtgtggctg ggctctctgg atttggctct ttgggttgca ggagtcatgg ctcatacgct 3540

acatgaggca ccagctcatg taggcactgt cagttcctat gtgccccaca ggaaagcgcc 3600

cttaaccact gatgagtgtt gatgtttttc tgcactagaa ggcactatgt tgaactatta 3660

aacttaccag cactttcttt ttccactcca tagtttcatt gtactgacaa cctcagctgg 3720

catcatggac catgaagaag caagacgaaa acacacagga gggaaaatcc tgggattctt 3780

tttctaggga tgtaatacat atatttacaa ataaaatgcc tcatggac   3828

<210> 675

<211> 4172

<212> DNA

<213> Homo sapiens

<400> 675

actccttggt tttaaggctg agaaggactc tgccagcacg gagccatact actgcctctc   60

agacttcatc gctcccttgc attctggcat ccgtgactac ctgggcctgt ttgccgttgc   120

ctgctttggg gtagaagagc tgagcaaggc ctatgaggat gatggtgacg actacagcag   180

catcatggtc aaggcgctgg gggaccggct ggcagaggta aggcagaggc attgcgccga   240

ggggctgagg acagaggcca ggcagtaggg agcctggggt gggtgcctga ggactgatca   300

gcccttagaa ccagtgtctt ttttttttt ttcttgagat ggatgctgct ggctttaaca   360

ttatacgtat tttaatatta tgtatcccca gattgcttgt gtacattatc tttgaggcaa   420

agaaaaacct tgaatggtgc cacagttggc tgttgctctt agagccttta tctctacctt   480

atctctgttg tctctctttg cttgttgtga tgtgacattt tcctcagtac cccaaaaaat   540

taaaaacaaa tttttatttc agagcccctc gttgtaatgc tggtgtcatc tatagattct   600

tcatcttcct ctgcatggaa tgagggtagt agcctttgcc ctggggagag cctctccctt   660

ttcctgcagt gaacagtgga ggaactagca gctgtatggt cccagctgct ctttctggcc   720

tgtggagctt tggattgacc tttagggaaa tcgttaattt taaggtctaa aatctttagg   780

tcattaagta tggtccttca gagctcaggt tgaggccaaa attgagctgc agagcagcag   840

ctgatgaaag tacaaaccaa tcaagaatcc agcctgtttc ctcttgtcaa atttcccctg   900

gctgtggtcc agatgaggga gggtgtcctc atggttctaa ttcaggggt ggaggctgca   960

ctgatgctgt gagcccctgc gtctgcctaa gcatgcctgc tgctttgggt cccaaggcct   1020

ttgcagaaga gctccatgaa agagttcgcc gagaactgtg ggcctactgt ggcagtgagc   1080

agctggacgt cgcagacctg cgaaggctgc ggtacaaggg catccgcccg gctcctggct   1140

accccagcca gcccgaccac accgagaagc tcaccatgtg gagacttgca gacatcgagc   1200

```
agtctacagg cattaggtta acagaatcat tagcaatggc acctgcttca gcagtctcag  1260

gcctctactt ctccaatttg aagtccaaat attttgctgt ggggaagatt tccaaggatc  1320

aggttgagga ttatgcattg aggaagaaca tatctgtggc tgaggttgag aaatggcttg  1380

gacccatttt gggatatgat acagactaac tttttttttt ttttgccttt tttattttg  1440

atgatcctca aggaaataca acctagggtg ccttaaaaat aacaacaaca aaaaacctgt  1500

gtgcatctgg ctgacacttc cctgcttctg gttttcgaag actatttagt ggaaccttgt  1560

agaggagcag ggtcttcctg cagtgcctgg aaaacaggcg ctgttttttt gggaccttgc  1620

gtgaagagca gtgagcaggg ttcctgtggt ttccctggtc cctctgagat ggggacagac  1680

tgaagacaga ggtcgtttga tttcaaagca agtcaacctg cttttttctg tttttacagt  1740

ggaatctagg aggccactta gtcgtctttt tttcctctta gaagaaaagc ctgaaactga  1800

gttgaataga gaagtgtgac cctgtgacaa aatgatactg tgagaaatgg ggcattttaa  1860

tctaagtggt tataacagtg gattctgacg gggaaggtgt agctctgttc tcttcggaag  1920

acctcgtttt ctaaaggctg gactaaatgg ctgcagaact ccctttggca aaaggcatgc  1980

gctcactgct tgcttgtcag aaacactgaa gccatttgcc ccagtgtggt caagcagcca  2040

tgctttctgg gcattttcgt cctcccataa tttcatattt ccgtacccct gaggaaacaa  2100

aaaggaaatg aggagagaaa gttactgtta agggtggtta acattttttt tgttttgttt  2160

tgttttggtt tttttttttt gagacagagt ctggctctgt cgcccaggct ggagtgcagg  2220

ggcgcaatct cggctcatag caagctccgc ctcctgggtt catgccattc tcctgcctca  2280

gcctccagag tagctgggac tacaggtgcc cgccaccaca cccggctaat tttttgtgtt  2340

tttacaaaat acaaaaaagt agagacagga tttcactgtg ttagccagga tggtcttgat  2400

ctcccgacct cgtgatctgc ccacctcagc ctcccaaaat gctgggatta caggcgtgag  2460

ccaccgagcc tggccggtta acatctttta attgtttcca ggattgagca ggttctcagc  2520

tgggctctga tatcccgtgc ggagttggac aagtgggcag cataaagtca ctcatttctt  2580

accattttat tcccctcgat tctcaatata ttcagtaatg aagaatggtg ccaccactca  2640

agcaacaagc ctcaaactca cccatgtcat ctttttcttg gatgattgca gttatttcaa  2700

aaatttgcat gcaaaatata cactcatcct acttcaagat ggtggtggca atagtcagga  2760

gaaggtagca ttggagtcct ggtttgattc gaaggatgaa gacgaagaag caagggagga  2820

acaaatgaag aaccatcttt gttcatgaat aggaatattc aagattataa aggtatcagg  2880

tctcctaaaa ttgatctatg gatttaatac cattttcaat ggaaattcca acagatttta  2940
```

ttgaatgaaa caagcaggtg tttatatgga gtagcaaagg acttaaaatt accaaatgct 3000

tctaaatatg aaggagaggt tggggacacg caccctatgt gataccaagt tttattgtca 3060

agacagtgtc atggtgcaga ggtaggcatt ctgagcaggg gaacaaaata agggcctaga 3120

aactcacccg tgcatatgtt gacctttgca aaatgacctg gtgacatggc aagtcagtgg 3180

ggacaggaag gaccactccc taagtaatcc cagaacaatg gctattcatg tgggaaaaaa 3240

agaaatttta ctttctctca ccttacctgg tgataagttc caaatatgtt aagggcttta 3300

atacaaaaag caaaaattgt cagtgtttgg atgaaaaaag ccttagggca ggaaagaatc 3360

tcttgagaca taaagtagta atcataaagg acaagatggt taagtcaatt ctgttaaaac 3420

tcaaggctta tattaagcaa acacttgaag tgagaagatg atccacaact tgagaagaca 3480

tttataatac aaataactga tgaaggattc ataatcacaa atatagagaa ttcctattta 3540

aaaaaataga aaatagtga agactacaca agaggaaata gggctttaa ataaatagat 3600

gttctgtagc attggtcagg gaaatatgaa ttaggaccac aatgagattc cattttatat 3660

ccataagatt tgcaaaggtt gggtctgaca gtaccagttg ttagatctgt agggacttgt 3720

acaacattgt ggatgtgtaa acaggcacca ctgctttaaa aaacaattat cccttacaga 3780

cttgaacatt tgcagacctt atgatcttgc ttccaactcc cacctgtatg tccagcaaac 3840

tcttgcatgt ggccactagg aggaatgtgt aagaatgttc atagttacat atttataata 3900

gttaataact ggaaaaagtg aaatgtatgt ctgtctacag gaaaataggt gaataattag 3960

atatatgtat tcattctacg ggatattatt cagtagtgga aatgagtgaa ctacagctat 4020

acctcacaat aagaatgaat ctcagaaaat attaaggaaa aaagcaagtt tgaagagacc 4080

acatggggcg tactattttt attgagccca aaaacaagca aaaccaaaga atatgtagtc 4140

taagcatacg tatacaataa aactatgcta tt 4172

<210> 676

<211> 4783

<212> DNA

<213> Homo sapiens

<400> 676

gcgcgtggcc gccatggcgc ggaatgtggt gtaccccctg taccggctgg gtggcccaca　　60

acttcgggtg ttccgaacca acttcttcat tcagctgggc tgtgagcagg caggactgcc　　120

ctcccgaagc aggtgcagaa cgagcatttg gggaaggaga agacacgtgt ccgcacctgc　　180

agctggtggg gtgggagggt gagctgcctg cagggtggtg ggggcagcc cggggggggct　　240

cctgaggatg cacagctccc tcccaaggcc agggctctgg gcactggggt ccaggagaga　　300

gttttgctct gcccatggcc aacaggtagg tacccagatg ctgttctgtg gtggagtgag　　360

gggaccttat tccctggggc ccagaggatg cccagctctg ccaagggcct tgaatgactc　　420

catcagagga ggtccggagc cccagggcca ttccctgatt cctgtcactt tcccaggatg　　480

ccctccctca ccgggtcggc tcccagctcc ccttggagtg aggagggctg gaccccactg　　540

agtccatcgc agaccccagc tggccgggcg catggcttcc cgtctcctct ctgggcttgg　　600

tcctcttgtg tgaggggtca cggcccaggc acccatctcc tctgggttga ggctggaggg　　660

tgtctccggg aagcccctac gagtgcaaaa ccttgctgtt gatctcaaga ccccgggcgg　　720

agacgggagg aggagggtgg aggaacgaag accagattcc tggaggacga ttctgttgag　　780

cctccaattc cctggactga ttatttgctt aagtcagaac tcccggccgg atggggctgg　　840

ggccaggaga tcagggagag ggttctttcc tggacaggtc tgcttatccc aagggccaat　　900

tagcagtagc agagcctcag caggagcttg cttgtcctgg gagcaggggt gagcttatct　　960

gctccgaggg gtgccctgcc gggcctcggg gccttggaga ggggccggct ccgttctccg　　1020

tctcctggaa agccaaggtg ggaggtagca tctggaatta gatgcggttg aggatgcttc　　1080

ctgactggga gggggttttg ctcctccctg ggaccacagc aggacatttg aagcaccagg　　1140

atcccagcgg gggcctgtgg ggaggcatgg ccatttctaa atgaggctct gggtacctgg　　1200

tggcccatgg agcggggctc tgggaattgc ctcctgcgag cggccattgg aggggaggt　　1260

attacccca ccggtgtcct cagccagtcc ctcctggagt cctcagagcc ctcaacaggc　　1320

tctcacctgg ccctccgctg ccagggctgg accagaggct cttcaggagc ttgtgctctt　　1380

ccgcccccag agctccagcc tggacgcctt ggaactggcc gtcctgagct ggacagccaa　　1440

gatgcgatgg tggctgtgct gggctccagc ccatggtggc ctccaaggtg gtgctggggc　　1500

cttaggggaa agggttgctt ttcatggctg gctgagggga tggcagagct gtcctccgtt　　1560

ccgcctcctt tacccatgga tgcggccgca tgcgggtctc catcattgtc ctatccttga　　1620

ccatctggct aagactcagg gacccacagc agccgctccc ccactggctg tctgggaaaa　　1680

ggcccacatt gccgggcaca caccagggtg gccagggatt ggtcactgcc tgaatgtccc　　1740

cggaccgatg cccgtgtgcc cttgggcagc cttcccctcg gacaggctgt ccaggctggg   1800

aaaccctgag ccagagggat taagaagaaa ggacagagtc gactgtcccc ttggctaatt   1860

tgtgcttcat ttagtgtaat tttgctcagt ggtcaaaaca tagaggtgat gacaccgagg   1920

gtccagacat gtcccatctc cagggccaac ctcctgcaga tccccagccc cgcccagccc   1980

tgcctgctgc gccctgggcc tgcctctgcc ctcacagcca tcctgtacat tcctgtgtct   2040

cagtggcggg ggataggggg tgggggaagg gtctccgata caccagggg tgcagggacc   2100

ctcagcatgg gtgcccaggc agctctctat ggaaatgcag gattgggtca ggaccccaga   2160

gctgtgcagg gccctctgtc cccagcccaa gtcctgagtc cctcttgcca gcctctgctg   2220

ctccgcgtgt ggtaggagct accagtctgg ggtccgggct gggcgcattc gtgatgcctg   2280

cctggggtct gagcaaatcc tccccacggg gtctgagcaa gtcctcccca cggggtctga   2340

gcaaatcctc cccacggggt ctgagcatgt cctccccacg gggtctgagc aaatcctccc   2400

cacggggtct gagcaagtcc tccccatggg gcctgagcaa atcctcccca cggggtctga   2460

gcatgtcctc cccacggggt ctgagcaaat cctccccacg gggtctgagc aaatcctccc   2520

catggggtct gagcaaatcc ttcctatgcc gtctgagcaa gtcctcccca tgggttctga   2580

gcatgtcctc cccacagggt ctgagcaagt cctccccacg gggtctgagc aagtcctccc   2640

cacggggtct gagcatgtcc tccccacggg gtctgagcaa gtcctcccca cggggtctga   2700

tcatgtcctc cccacggggt ctgagcatgt cctctccacg gggtctgagc aagtcctccc   2760

catggggtct gagcatgtcc tccccacggg gtctgagcaa gtcctcccca cggggtctat   2820

gtcctcccca cggggtctga gcatgtcctc cccatgggtt ctgagcaagt cctccccatg   2880

gggtctgagc aagtcctccc cacggggtct gagcaaatcc tccccatggg gtctgggcaa   2940

atccttccta tgccgtctga gcacatcctc cccaagctgt gaccgagtgt ccctcctgca   3000

ggtggaggat gttgctagga tgcaccttga gggcacccca gcctcgccgg agcgccccct   3060

cctcgtagcc tggggtgtgg ctgggtggtc tggggtcctg ggtgccttgt gatgctggcc   3120

ccagggtcca ctcagcaccg tcctggtgtc gtcatcagct ggaggcttcc cggggcctgt   3180

gctgggggtg gagagcaggg agaggcagca gggttctcct cagggtgggg ttgctgggaa   3240

gcaccatccc acctgtcaga ctggccttga ctgtagacac cccaggtgac ctggaaggac   3300

agacggaccc caggtgatga gaaaggacca gagtctgacc tctcacccct cctaagctct   3360

gaactcccgt tggcttgcct gacctccaag tcctcctggg gctgaaccct ctacagatgc   3420

ccctcctggg ccctggggtg ggcccggttt agctctccat tgtggctgaa accccaggg   3480

cttcagtgct ggcttgaaga ggggggtgggg ctccccaggc ctggggattg gcagtttttt 3540

cctcccctct tcccaaactt tcagactgga ccacttaaga ataatgaggt ccaggtggtt 3600

ccgcttgagc ctggatcctc actggctgtg ggactgagct tcccctgccg gtcccacctc 3660

ccaccgggag cagctaatga cagccagagg ctggaaggtg aagctcccct cggctgtcag 3720

gcgggccgca gggcaggggc tgggcaggcc aagggcgcca ctctcctgcc caggccaggg 3780

cacccgatca ctgcaccaca ccccttgtgg ccgtctgtcc agccagggcc ctgctgcagg 3840

tgcttcccgt gggactgtag ggagaacaat caagacttct gcctccttgg tcgagcaggg 3900

ctgcctcccc atctcatcta ctggcaagga ggctgggcac cttcagggag cttcagtttg 3960

ggaagaggga ggaggtctga ggtggatggt ggcgatggct gcgcagcagt gagaatggac 4020

tgagtgccac tgatgtgtgt gctccatggc tccgtggctc cgtggctcag tggctcagtg 4080

gctcaatggc tataatggct agttttgtta catattttca ccataataaa acaaaacatg 4140

tccaaggtgc tacaaggagg gaggagcccc tggagcaccc gcctgccatc tcccatctgc 4200

caggcagcat ccctccactg gctctctggg aggggttcga ggcctccagc ctccctgtgg 4260

cccccatctg cctccaggag atttgttccc tctctcctgc cccgaaaccc tcgaggcagc 4320

cctgctcttg gtcactgcag aggaagtggc ccaggcttgg cccaggccag ctgtggcctc 4380

tggaggcaag atgtggggac tcacagtgtt cgaaggccac accccccga gcacatgggc 4440

tccagtgcct ctgaggcaaa gagcaggcag caccgtgcgc acagcagtgg gagacacagc 4500

acagccacca gggcagcccc caggcagacg gcgggcctag agagggcggg atgacacaag 4560

aaaggttctc ctttggagac ggcgaggtca ggcaggtggg agagggttca cggtgcttga 4620

ggtgcagaga gaggatggtg gaatggaaaa cgtagggtga cttgtcgggg acaggcccag 4680

ggccacaact cgggcaggcc tattgcccga gttttgggtc ccatcctggc aggcaggggga 4740

gagaattctg aattttttaa tgaaacggat agttgagggc tgg 4783

<210> 677

<211> 3651

<212> DNA

<213> Homo sapiens

<400> 677

caaggtgggg	gccgcctgct	cagcccaggc	tccctgaacg	tgtggctagc	tgagtttgcg	60
gaagaaacca	ggagagtgcc	aacaccaggc	ttgcaagcaa	gaggctccct	gactgcctga	120
tcctggagcg	caccccatcc	tccctgtgtt	ccctgggcct	cagctgttcc	ccagtgacct	180
tggagacacc	ctgccccacc	ctggctccac	aggagccctg	cccatcaccg	cctcagctct	240
gagtctcccc	tggggacaca	accttcctcc	tggtgcagag	gcgcaggatg	ctgcccctaa	300
ggcccatctt	cctctgcagc	atgttttgat	gtcagctcat	tcacaggaaa	gaaacaatca	360
catctcagtg	cccagaatgg	ggaccaatag	gagaggtcac	tgggaataaa	gcccacacgc	420
accccagggt	ccatgggctc	cccagaaatg	caggtggcct	ccgccagagc	caacaagcct	480
aagttgctga	tcagcccctc	cctgcttccc	tgtgtggaag	aggaaacaga	ggcccagact	540
agtagggctc	tgccgtggtg	gccggctgcg	tccccagacc	tctggtccca	gggctggctg	600
ggagtgcccc	tccctgtgct	cacttcctgc	tctcctggga	aatggctcag	ggatggggcg	660
tgtggggaca	gatgctggca	tagctcacaa	aatgcttgca	caagggacac	tccatggcag	720
gtccctgcag	gagagcaaag	tcacaacatt	cagagattcc	ctgcactctg	aggcccgcag	780
agcctggccg	accaagcgag	gctgggagga	tgttgcctgc	tggtcagggc	agccctctga	840
tcagggcggc	cgactgaggc	tgggaggatg	gtgcccgctg	gtcagggcag	ctgagcgtgg	900
ctgggaggat	ggtgcctgct	ggtcagggca	gccctctggt	cagggtggcc	aagcgaggca	960
gggagggagg	tacccaccgg	tcagggcagc	cgaacaaagc	tggaaagatg	gtgcctgctg	1020
gtcagggcgg	ctgaatgagg	ctgggaggat	ggtgtctgct	ggtcagggca	gctcaggagg	1080
tgctgcccag	gaggtgctgt	ccaggcagag	cctagggctg	gtgtgggtgt	gccatgctcc	1140
tgagaagttt	ctgggttgtg	gctttaatgt	tctcctgcag	tgagaacgct	gacacttggc	1200
caaagggtcc	tcacctctcc	cctagtacac	ttctgagatg	ccaggaaggt	tctgaacatc	1260
agattgattc	ctgggactcc	cctccagggt	ggccttactg	gagtcaggag	cccctgcccc	1320
actaggatgg	ctctgcagtg	gcctgaggac	agtgagcact	gactggtcac	tggtgcaaag	1380
ttgcccactg	tgatggtttt	gaccgttgat	gggaaccaag	tgaaagccct	gcagctattt	1440
ctaggcattt	cagagggtgc	ttccctgcat	gtactctgct	gcagaccatc	ctccctgggc	1500
caggagcccg	ctacacagtg	ggagattctt	tttcttctct	tttgagcact	tttattctct	1560
ttttcttaat	ctctgctcct	cctttgaact	gagaaatgtg	caaatctttt	ttgttagttt	1620
tgaggttgct	tcttatgcat	atttcatctg	gaactttccc	ctttgggggt	gatctgttct	1680

atcagcctgc ccgctgctag agaggccgag gtggtccggc cagccgtgcg ctgctgctgg 1740

tgtctctgtg ggcatgacct ggtgagatat cattctgcat ctgggggtcc atcctatcag 1800

ccctgtgttc tagattcccc agtgactgac atttagccag tctcctctgt cactctccag 1860

tgacatgtac acactgttgg cacgaactgc agatgtcacg ttctgtggct gagagcctca 1920

gtgtgcatct gtagtaggag gatgtcagtg aggactgtcc tgtcgctgct gagctggcac 1980

cgactgtgcc tggtctacac tccaggtctg ccaaacgacc cagcaaggtc cttcacaact 2040

cttctgatcc aggatcacac atcacttgtg ctttgatgcc tgcttctgaa caattttacc 2100

tcctgagatg tccatttttg ggagtgtgag ccctcctctc ctggtgacag ctggctgagg 2160

ccgtccagcc tcaggacaca cagggaacgg ctgcataagg agatctgggg cagggggccc 2220

accaggatgt tctgccctgt ggggggcaac accggctgtg gtctgccggc ggcatccagg 2280

gacagtctgt ctaggtgagg ctgaggccgc ccccactcgc tccctcaccc ccatgctgac 2340

agcagtgagc tgaccacaga ctgggggagc cccacaggga gactggcctc cccagcacat 2400

gccccgcagt gccagacgcg gtcatcacag aggcaggtac acgacaccac ggacgtgcca 2460

cgtacccgcc atcgggacca aggaccactg agaaaccatg aaggccatgc agcgactgtg 2520

gtggcaggac cgtcaggagg ccataggtgc cacggctccc ctctggtggt tcacctgccc 2580

acctgtagct ggggtggccc ctccagtgcg ctccccagag cagaacaccc cccaggcaac 2640

acgtctgatg aaggccaaca gcgtcagtcc tctggtgttt ggtgacatca aagctgtgcc 2700

gaaaggcctt ccctcactgc taacacttga agggcttctg tccggtgtgg accctctgat 2760

ggcgaatgtg gtctgtctta tgcttaaaga tccacctcca ttaactgcac tcttagggtt 2820

tcttcctctg aaaaggaatg aacacgggaa cccccctcaaa ggcattttta aatgaagcgt 2880

ggaaggcatc aaagatgtgc tcttcttcag gactcaggct tctccatcat tctctgttcc 2940

ttggaagcgt gagggctaag gagctgctga cttctctctc ttggccccac ttcaagaaag 3000

gcttgcttcc cacacacctc tccacgctcc cagtgcggga ctgacactct gcaccgggag 3060

gccaagggcc accatcgtct tgctgggaga aggtgtgacg tttcttggtc ataggaggga 3120

gtgtgatctg acaccagagg acttaatata acattgcagt gttaacatct tcactggcag 3180

attcatggac tttccccctc ctgaatgcat ttcaacacct tgaaatgaac gatgcctcat 3240

gtctctgcag ggtggacata gctctaactc tctgaagctg agttggacag gtgaaacatc 3300

cacagtcttt cttgacctga atcaagctca gagtgacagt gtttaagatt atatgtcaag 3360

ttctgtgtga aatgagagac catgggggatt cattattgct ggagttgacg gtattgcagt 3420

tttataacca tctaataaat tagcatttaa tactgagaga tttcatctta aactcagagg 3480

attgctttgt tttaaagaag atttttgcaa ggagaagcaa tggaaaccat tcagaaaatg 3540

tgggagataa aaatcctatt caagaaaacg gatcttggat ctttgcattc acttgatttg 3600

tcagaatatt attctgtgct aaaaaataga agggattaaa tgttaaaaat c 3651

<210> 678

<211> 4210

<212> DNA

<213> Homo sapiens

<400> 678

tccttggcct tgcatggcct gtttattttt aaaagtgcaa acttgcaacc ccaaacaagc 60

tggggccctg aggccgtcaa cccctccagt ctcccctgtg acccgcagtc tgcgtcctgt 120

tcccagtttc attcctcaag tgcatatatt tttatttttt tatttttttt ttgagacaga 180

gtctcgctct gtggcccagg ttggagcgca gtcgcgcgat cccggctcac tgcaagctct 240

gcctcctggg ttcacgccat tctcctgcct cagcctcccg agtagctggg actacaggcg 300

cctgccactg cgcccagcta atttttttta tttttagtag agacggggtt tcaccgtggt 360

ctcgatctcc tgacctcgtg atccgcccgc cttggccccc caaagtgctg ggattacagg 420

cgtgagccac cgcgcccggc ctcagtgcat atatttttaa tatcttgtag ttaccctgct 480

gtatactgtc atcttaggga ccttttaaac aataccagta tgagcgggac ctaccctgct 540

gctcagtgac cccaggcagt gtgtcctaag gtggtgtgtc ctgaggcgtg cgacactctg 600

tcctgtccca ggcactgtgg tgggggcatc cggtgtccag gtgcagaggc aaaagctgct 660

cccgggtttc ccagaaatgg ttccgaggcc tgggtcccag agagccagtg caggttgggg 720

ggtggacctc tggctctgtg gggggtctg ttctgctcca gtgggccgtg tctgccttgt 780

catcatccag acagccacag ctggctcctg ggtcccctcg tcaagcagca tttcccagta 840

acagtgactt cgtggaacac ttaggaagcc cttaaaaacc atcctcggac ctctgaggca 900

gggactccag ggggcacagc acctgtggtg gggacaggca ggcaggctgg atgcggggag 960

ggcccgggag gaggagtgag gagccacgca cggaactgct cagactctcc cagcaaaggt 1020

```
cctggccctt gtgcatgcct ttagttacat gtctgcctta gaggcaaaga cgagccgtca   1080

cggggggaccc accgggtcag gggtctgcgg acacgcttgc aggaggaacc caaggaaagg   1140

gggtgggggt ggagccccac agattgcgtc gtgggtgggc gtggagcttg cacagcaggc   1200

ctgctgctgc ctcccagggc gctggttcac agcacggtcc cagcagggag aggctgagcc   1260

ggttggacta gaccacccaa ggtctcaggt tgcagctccc tggtgaggag aggacaaggt   1320

gacttctggg tggggtgggg catgaagatg gaagtctgac ctcgggttcc aacttgactc   1380

aaacgagctg agctcctgga gtttagaaag ggacaccagc ttcagacatc gtgggggctg   1440

gcatggtttg ctctcgtggg ctggatggga gcctccctag cccctcctga tttcaggctg   1500

cagcctatgg gtcactccag gcacaggtgg ggtgagtcaa gatctcactg gaggagtcac   1560

tgagcaagag ggccggtggg aggcaagggg gcatccaggg acaaggggcc agctctgccc   1620

ccacttcccc accccaccca ctctaatact gcagcccctg tgcttccaac tgccccctcc   1680

agcctggggc ccagcccctc accgccagag actgcccgcc tcctcttggg caagctcctg   1740

gtgggctcca ctgaagccaa agtgggccct tgggggcagg agagccagag caaggcacgc   1800

tccacctaga tttagaccgg gagagacctg gaggatgcca accccagagg tcctggggcg   1860

agctcagtgc tggggaccgg aggtgccgtc tgctgccaga atcatggtgt gcgtggtccc   1920

tgcccagcac gggtcagcca gagcgagcca gggcagaaat gacggccagg tcgatgttcc   1980

tgtcggggggc tgcttgtccc aggaggtaat ctgagtcctg gccgagccca aaaaagccac   2040

tgccctttag agccagctgt gagggtgcag gaggcagtgc agagggagtg ggacccacag   2100

ctgctagcct ccctccaaac cctcctgcct ccaccagaca ccaggtcagg gggccacaag   2160

tgtgggtgcc gggcagctgc ccctcagctg agctgccggg ccacccagct cgtgtccctc   2220

ccctgccagg ctgcagctgg gatggtcacc cgggcagcct gagtcagcct gctttctctc   2280

tcaggtgagg cggaaccaac cctcctggcc atgggagggg ccgtggtgga cgagggcccc   2340

acaggcgtca aggcccctga cggcggctgg ggctgggccg tgctcttcgg ctgtttcgtc   2400

atcactggct tctcctacgc cttccccaag gccgtcagtg tcttcttcaa ggagctcata   2460

caggagtttg ggatcggcta cagcgacaca gcctggatct cctccatcct gctggccatg   2520

ctctacgggga caggtccgct ctgcagtgtg tgcgtgaacc gctttggctg ccggcccgtc   2580

atgcttgtgg ggggtctctt tgcgtcgctg ggcatggtgg ctgcgtcctt ttgccggagc   2640

atcatccagg tctacctcac cactggggtc atcacggggt tgggtttggc actcaacttc   2700

cagccctcgc tcatcatgct gaaccgctac ttcagcaagc ggcgcccat ggccaacggg   2760
```

```
ctggcggcag caggtagccc tgtcttcctg tgtgccctga gcccgctggg gcagctgctg  2820

caggaccgct acggctggcg gggcggcttc ctcatcctgg gcggcctgct gctcaactgc  2880

tgcgtgtgtg ccgcactcat gaggcccctg gtggtcacgg cccagccggg ctcggggccg  2940

ccgcgaccct cccggcgcct gctagacctg agcgtcttcc gggaccgcgg ctttgtgctt  3000

tacgccgtgg ccgcctcggt catggtgctg gggctcttcg tcccgcccgt gttcgtggtg  3060

agctacgcca aggacctggg cgtgcccgac accaaggccg ccttcctgct caccatcctg  3120

ggcttcattg acatcttcgc gcggccggcc gcgggcttcg tggcggggct tgggaaggtg  3180

cggcccctact ccgtctacct cttcagcttc tccatgttct tcaacggcct cgcggacctg  3240

gcgggctcta cggcgggcga ctacggcggc ctcgtggtct tctgcatctt ctttggcatc  3300

tcctacggca tggtgggggc cctgcagttc gaggtgctca tggccatcgt gggcacccac  3360

aagttctcca gtgccattgg cctggtgctg ctgatggagg cggtggccgt gctcgtcggg  3420

cccccttcgg gaggcaaact cctggatgcg acccacgtct acatgtacgt gttcatcctg  3480

gcggggggccg aggtgctcac ctcctccctg attttgctgc tgggcaactt cttctgcatt  3540

aggaagaagc ccaaagagcc acagcctgag gtggcggccg cggaggagga gaagctccac  3600

aagcctcctg cagactcggg ggtggacttg cgggaggtgg agcatttcct gaaggctgag  3660

cctgagaaaa acggggaggt ggttcacacc ccggaaacaa gtgtctgagt ggctgggcgg  3720

ggccggcagg cacagggagg aggtacagaa gccggcaacg cttgctattt attttacaaa  3780

ctggactggc tcaggcaggg ccacggctgg gctccagctg ccggcccagc ggatcgtcgc  3840

ccgatcagtg ttttgagggg gaaggtggcg gggtgggaac cgtgtcattc cagagtggat  3900

ctgcggtgaa gccaagccgc aaggttacaa ggcatcctca ccaggggccc cgcctgctgc  3960

tcccaggtgg cctgcggcca ctgctatgct caaggacctg gaaacccatg cttcgagaca  4020

acgtgacttt aatgggaggg tgggtgggcc gcagacaggc tggcagggca ggtgctgcgt  4080

ggggccctct ccagcccgtc ctaccctggg ctcacatggg gcctgtgccc accctcttg   4140

agtgtcttgg ggacagctct ttccacccct ggaagatgga aataaacctg cgtgtgggtg  4200

gagtgttagg                                                         4210
```

<210> 679

<211> 4539

<212> DNA

<213> Homo sapiens

<400> 679

aggaatttcc	acaccggcat	ctggtactcg	tgcgaggagg	agctcagcgg	gcttggtgaa	60
aaatgtcgca	gcttcattga	cctggccccg	gcatcggaga	aaggggtcct	gtggctgtct	120
gtggtctccg	aggtgctgta	cattctgctg	ctggtggttg	gcttcagcct	catgtgtctc	180
gagctcttcc	actccagcaa	tgtcatcgac	gggctcaagc	tcaatgcctt	cgcggctgtc	240
ttcacggtgc	tctcaggcct	cctgggaatg	gtcgcccaca	tgatgtacac	gcaggtgttc	300
caggtcaccg	tgagcctcgg	tcctgaggac	tggagacccc	attcctggga	ctacgggtgg	360
tccttctgcc	tggcgtgggg	ctcctttacc	tgctgcaagg	cagcctctgt	caccacgctc	420
aactcctaca	ccaagacggt	cattgagttc	cggcacaagc	gcaaggtctt	tgagcagggc	480
taccgggaag	agccgacctt	catagaccct	gaggccatca	agtacttccg	ggagaggatg	540
gagaagaggg	acgggagcga	ggaggacttt	cacttagact	gccgccacga	gagataccct	600
gcccgacacc	agccacacat	ggcggattcc	tggccccgga	gctccgcaca	ggaagcacca	660
gagctgaacc	gacagtgctg	ggtcttgggg	cactgggtgt	gaccaagacc	tcaacctggc	720
ccgcggacct	caggccatcg	ctggcaccag	cccctgctgc	aagaccacca	gagtggtgcc	780
cccagaaccc	tggcctgtgt	gccgtgaact	cagtcagcct	gcgtgggaga	tgccaggcct	840
gtcctgccca	tcgctgcctg	ggtcccatgg	ccttggaaat	ggggccaggg	caggcccaag	900
ggaatgcaca	gggctgcaca	gagtgacttt	gggacagcag	ccccggactc	ttgccatcat	960
cacatgaccc	ctgctgggca	cagctgcgat	gccaggagac	acatggccac	tggccactga	1020
atggctggca	cccacaagcc	agtcaggtgc	ccagaggggc	agagcccttt	gggggggcaga	1080
gagtggcttc	ctgaaggagg	gggcagtggc	gcaggcactg	caggggtgtc	acacagcagg	1140
cacacagcag	gggctcaata	aatgcttgtt	gaacttgttt	tcttgcggtg	tatggaggcc	1200
agttgctctg	tgggctgtgg	ctgccctgtc	attgccccac	cccattactc	ctcaaggagg	1260
ctgaaggtga	cagcagagac	tgtgcagagg	ccagggccag	acactgcagg	gtggcaggga	1320
gggagcacag	agcccaggct	ggacacaggc	tggcagggct	gccttgtatt	ccagagagtg	1380
ggcaaggcag	gggccaggca	agcaagagat	gtggggcgag	caagaagtgg	gcccccaaac	1440
ccaagcccta	agcagggagg	gtgaagaagc	cacatttctc	ttcagagctc	agcaacatca	1500

caccaccctg accctgagga ggctttaccc tgtgcctagc accacctta cagaaaatcc 1560

cagggcttag atgcctggag aaacagattc ttattataaa gaggaggaaa attagggtca 1620

cagagatgaa tgaagtaact tgcctgtgat tacagagcta gcaaatggca gagatggggt 1680

ttgaatcagg actcctgact ccaagttcag tcatttccca agaggcctta ttccttccca 1740

gaagaatttc tagagctttt ccccacgtag aatatattct tctcctttat ccttccatcc 1800

ttccatccat catccatcac tcatcaagcc attatccatt atccatccat ccattcatca 1860

ttcgtccatc tattatccac ccattcatca tctattatcc atccatcatt catcatccat 1920

ccatcattca taattcatct ttccactcat ccatccatca ttcattcatt catccatcct 1980

tccatccatc catcatctat ccattcatcc atccatttgc cacatccact cattcatcag 2040

ctatccatca tctatccatc catccatcca tccagcatct atcactcatc cagctattgt 2100

ccattgtcca ttcatccatt tttcattcat ccctccatca tcattaatcc attatccacc 2160

cactcatcat ctattatcca tctatagtcc atcaaccatc catccttcat catccatcca 2220

tccatccttc atccatccat ccacccatcc atccatccat catctgtcca tccattatct 2280

atccattcat ccatccattc atcatccacc cacctattca tcagctatct atccatcatc 2340

catccatcca tcatccatcc atccatccat ccatccatcc atcatctatc cattcattgt 2400

ctatgctttc atccatccat tcatcatcca tccacccatt cgttagctat ttatccatta 2460

tccattcctc catctatcca tcatccattc atcccttatc cattcaacca ttatgcattt 2520

cttcatttat ccattattta tccttccatc catcatccat catctttcca tccactatct 2580

atccattcat ccatctatcc atcatccatc catcctttat ccatcattca tcagccatca 2640

tccctccatc tatccattat ccatcatcca ctcatccatt catccctcca tctgcccatt 2700

atccatcaac catccatcca tccattatcc gtcatccaca catccattca tccctccatc 2760

tgcccattat ccatcaacca tccatccatc cattatccat ttctgcatta tccatttatt 2820

ctttatccat ttcttcatct attcatcatc tatccatcca ttatccttac acctatctat 2880

catccatcca ttccttcatc tatccatcat ccatcaatta tccatccatt catccatcca 2940

tctatccatc ttctattgat tgcttgtcat ccttccttgt atcagacttc catccatcct 3000

ccttccatgt gtcacacatc ctcattactc aaccatccag ctgtgcatcc atctattcac 3060

tgatatagtt cactgtgccc ctactatgtg ccaagcactg tggtaggcac ttgaggtggg 3120

atgctggagc atccagagag ggcatctatt gtcgtgagcc tgggttcaga ttccaccttc 3180

tccacttgtg accttgggcg agttacttga cctttctgtg cctgtttcct catccattaa 3240

```
atccggataa tcattatacc tacctcttca agctgttgtg caaattaaat gagctaacat   3300
atttgaagtg tctagaacag agcctggcac aagtaaacac tttgtgggtg tttactaaca   3360
ggacaacaag gggaaatcgg ggctgtggga gctgtagtct agggaggctc ctttgagaaa   3420
atgatgtcta agccaagaca tgaagattgt ctgggcatca gccaggcaag agtatagcag   3480
ggaaagaaag tacattagag gactttaaaa tagtcccaat ggcaggtgtg gagagcaggg   3540
aggtcaggag gcagttgtgg gaaattaggc atcagagggc agtggagcca ggccaggagg   3600
aactggaaac cttcttaggg agcttagagt ttaccctggg gcaatgggga gtgggcagtg   3660
agatgctttt agcagactgg gatgcgcctg ggtgtacatt tgaggaagat caccgcaact   3720
atgggcacag aatagttgtg ggagatgctt ctcccttcct catccctctt acactcaaga   3780
aagagaagaa agtgggctgg cttaggaaag ttgccctggg gaggggacca tgcgggcaga   3840
ttcaggaacc aattaggagg gaatagactg agtgggagaa gaggaaagtt ggtgacgact   3900
ctcaggttac agggtcagct tgggggatag ggaagacgga gacttcgtgg ttcagatgtc   3960
ttgagtctca ggggctcagg ggacagccag ctggaggttt gtgctcattc attcacgcat   4020
tgattcatca agcgaacaat ttgttaattc actttccatt cattcagtaa atattaatga   4080
cctactaggt ggggcttaag gcggggctgg aaatgggcct gggagagcaa ttatggtcca   4140
gctctactga ggccttgaat gtcagaacaa ggaatttggg ctttggcctc atgcaagaga   4200
gggcggctgc catatatggg cctgggcagg acagatctg acagggatct agccctggcc    4260
accaggcatc taggagctct tgttctcacc cagggtcctt ctgaagttgg cgagtggacc   4320
gcaggaggtc caggagatga ttgtagttga cacatgggga aaattttaat ctattttaat   4380
agttgtgttt atgtaaatgt gtattagaaa aaaatgtaca gtgggcacat cagtgctatg   4440
acttcacaga cgttactgct taggatgaaa ccaaaatagg catttaagta aaagaaaaaa   4500
agagttggct taaagaaaaa tattaaataa ataatcgtg                          4539
```

<210> 680

<211> 3413

<212> DNA

<213> Homo sapiens

<400> 680

```
ggtttgcaag aggaaggcag acaacccat cggaaggtgg gcggaggaca tgaacggaca      60
cttctcaggg gaggacattt atgcggccaa aaaacacatg aaaagatgct catcatcact     120
ggccatcgga gaggtgcagg tcaggaccac ggtgggatac catctcacac cggttagaat     180
ggcagtcgtt agaaagtcgg gaagcaacgg gtgctggaga ggatgtggag aagtgggaac     240
gcttttgcac tgttggtggg actgtagact ggttcagccg ttggggggggt cagtgtggcc     300
attcctcggg gatctagagg tggaggtacc atttgaccca gccattccat tgctgggtat     360
gtacccaaag gactatggat catgctgcta tagagacgca tgcacgcgtg tgtttattgt     420
ggcattattc acagtggcga agacttggaa ccaactcaaa tgtccagcaa tgatagactg     480
gattcaggaa gtgtggcgca tgtacaccat ggaatactat gcagccatag aaaatgatgg     540
gttcatgtcc tttgtaggga catggatgaa attggaaatc atcattctca gtaaactatc     600
gcaggaacaa aaaaccaaac actgcatatt ctcactcata ggtgggaatt gaacaatgag     660
atcacatgga cacaggaagg gcaatatcac actctgggga ctgttgtggg gtgggggggag     720
gggggaggga tagcattggg agatatacct aatgctagat gatgagttag tgggtgcagc     780
gcaccagcat ggcacatgta tacatatgta actaacctga acaatgtgca catgtaccct     840
aaaacttaaa gtataaaaaa aaaagactgt tgaatattag cccccaattt cttctggctt     900
atggggtttc tgctgaggag tccactgtta ttctgatgga cttccttttc taggtgacgt     960
ggctcttaac aatttttcctt catttttgacc ttggagatac tgacaattat gtgtttttggg    1020
ttgatcttct catggatctt actgaagtcc tctgaatttc ctgaatttga atgttggcct    1080
gtcttgctgg gttggggaaa ttctcctgaa tgatttcctg aagtatgttt tccaacttgg    1140
tttcattctc ctcatttctt tcaggtaccc caatcagttg taggtttggt cttttttacat    1200
aattccatag ttctctgatt atttttcatt ccttttcagt tttttctcta atcttatctg    1260
cctgtcttat tccagcaaga tagtctttga gctctgagat tctttcctct gcttggtcta    1320
ttcagttatt tatgcttgtg gttgcattgt gaagttctgg tgttgtgttt ttcaggtcca    1380
tcaggtcatt tatgttcctc tataaactgg ttattctggt ttacagttcc tataatgttt    1440
gcatggttat tagcgtcttt gaattgtttt agaatatact ttagctcagc aaaatttgtt    1500
attacccacc ttctgaagaa tacttctatc agttcatcca cctcaagcct ccacccagtt    1560
ctgtgccctt gctggagagg tgttgcaatc atttggagga gaagaggcat tctggctttt    1620
tgagttttca gcattttttgc attgattctt tctcatcttc atgagcttat ctatcttcga    1680
```

```
tctttgaggc tgctgatctt tggaagggggt ttttgtggggg ccattttttgt ggatgttttt   1740

gttgttgttt tctgtttgtt tgtttttctt taaacagtca gacccctctt ccttagggct   1800

gccgcagttt gctgggggtc cactccagac cctattcact tggtccctcc cctacctgga   1860

ggtgtcacca gtggaagctg cagaacagca aggatggctg cctgctcctt cttttttgag   1920

ctccatccca gaggggcact gatgtgatgc cagcaggaac actcctgtat aaggtgcctg   1980

gagacccctg ttggtggtct caatcagtta gggagtatgt acaggatcgg ggaccactta   2040

acaaagcact ctggctgccc cttggcagag agggtgcact gcactggagg gaatctccct   2100

tgtccagaat gtccagaccc ttcagagcca gcaggcagga aagactaagt ctgctgaact   2160

gcagagactg tggctgtccc tccccacagg agttctgccc aggaagatca gagttctgtc   2220

cataaacctc tggctggagt tggtgaaatt cccacaaggg ggccccaccc aatgagtagg   2280

gatggatcca ggttccacct aaaaaagcag tctggccatg atctgccaca gctgctgtgc   2340

tcccggtcta aacctccctg tctccccagc accaccaggg gaaaacagac aactgatgcc   2400

acagtgatag caaccacccc ttcccctggg aactcagtca tcttagacag tctccagtct   2460

gctgtcactg gccacagcct gagcagtgat gagagtctgc acagctctgt gcttggcacc   2520

caaggccctg gtggtgtgga ctcacaaggg gatctcttga tctgtgagtt gcacagatcc   2580

atggaaaaag catggttcct caggaaaggg agcacaatca ctcactgcct cccttgactg   2640

ggggtgggag tgcccccttgt cccatgcagc tcccaagtga ggcattgctc caccctgctt   2700

ttccttgctc cctgtggggtc aggccaatca ccttgtcagt cccagtgaga gaatctggat   2760

acctcagatg aaggtgcaga attcactcgc cattttttgtt cttctagatg ggagtcacag   2820

accacagctg cttctaattg gccgtcttgg cacctcctca tttaaccttc ttttctcatc   2880

taaagggggat aaaggatgaa actgtcccaa agaaaagttt ataaaccaat taagggagaa   2940

aataaaattc aactaggctt gcagaataat cagtggcaat catgaaatcc acttcccaat   3000

ttggcctact tccttgtagc tagttacttc ttactccccc aagatagtgt agcccttgtc   3060

acaagactgt gttcctttc ttttctatag ataagatcta aggcacatga gatgatatgc   3120

tttctgtttg agtttctcct ttatgttacg catactgata aaattgttga tgccagttga   3180

tctgaaggtc ccagcaagga gccgactcac agaagaatga agttttcaca tcatgatgat   3240

ttaatcttcc ttgacctgag caattgacaa ccccaattct ccagaacctc acccgccaca   3300

atccccttaa aaaccctggc ccagaacccc tcaagcagac agatgtgaag cttgaggatt   3360

ccttcatctc tttgcccaat ggcattgtga ttattaaact ctttttctgc tgc         3413
```

<210> 681

<211> 3682

<212> DNA

<213> Homo sapiens

<400> 681

```
atgtgggatc tggagatgta aacggatgca tggaaaagtc caaagcaaac acaagccatg    60
tctgggagca gggccagagg gggcccgtgg gaatgctgtt tagctctcag agcctgagat   120
gggttggaac tgcagtcaga gttctttttc catcccttcg gaacccacca ctccctaccc   180
cacctctcac agcctctgac caccctgcag agggcccagc ttcctgctca actcctgccc   240
tgaccgagag ggccaactct tccagttcta ttcaaatcca cccatgtttc atttatttac   300
caggaaaaaa aaaaaacaac ctaacatcta cttttattg aatactataa tgtagatatt   360
attccccttt ttacaacaga ggacacggaa actcagatga atttagcaac ttaccctagg   420
tcagtcacac ttccagaaac tgacagagag gacctcacat ctagatcttc cggcctccaa   480
aatctccctc attgtgactc cattctcctt tcctcctctt ttgccctgct ggagggaggg   540
gaagagctgc atctcaccat accctcctca ttgaaatgat gtgacatctg ggacttgctt   600
tagtgtaacc tagtgcagaa aagaagtgca aggccaccaa tgaaaccggt gctgactgct   660
aaagttgagt gttgggttca ttggagctcc atatactact ttaacatgtt ttaaattctc   720
ataataaaag agtaaaacaa tatatcctct gcaaagttct ggttagggct tatgggtata   780
gaaacaccta gtatgactgg agcttcagtg atgatagaga tcgtcagaag gttccagaac   840
acagagctgc aagggactgc aggggggtcac caggtccagt ccctgcctta gagcaggact   900
tcggccttct ccagacacat caacttgaaa caaggccaag gcctccctcc tccccgtgat   960
tccatctctt ggtgtgacgg gcctcaactt agctgaaaaa ccagccaagg atggagaagg  1020
ctgcttcctc cgatacacct tccacgtgaa gttttaattg tctgtctctc tgtgttttcc  1080
cctttggcag atattccagg ctcagggcag ctatagtttc ctggtctgtg gcgtgatctt  1140
tggttgtctg gcttttacct tctatatctt gctcctgttt ttccacagga tgcaccctgg  1200
actcccatca gttcctaccc aagacagatc aattggaatg gaaaactctg agtgctacca  1260
```

gaggtaaaac tgggtgaaga aggcaagaga agactttcag cctcttgatc accagcacga 1320

ccatactgtt tcagaaagct gggtggtggt ggaggcgctc tctcaatggc tattcaagtc 1380

ttctccacta aaacttggtt gggtagagga aattaaattg agtcctggta cctggtcaaa 1440

atcattagaa gtttacctgg cttctcaagt tatcttcttc cctggttcag actgttggta 1500

agagctgtcc agatacccag atgggaagga aggagacagc cgcgcgcttc actccatttg 1560

tcacctcatg catggaccat actctgggtt tgagatcatt cttcattgaa gtttgtaaaa 1620

ataggttgaa attgtaaagc tccatgatca ttgctatatg tagatatatt tcaatttaag 1680

caaaacaagc tgcaagttat tccctggcat gctcaaagga ttttcgtgct tttcacttaa 1740

tagtccaaag tctcttaaat tcctgctgca gacatcaata gcttatctat attctcaaac 1800

accaaaagga aaagttgaat cttgctctct ttggtatact aatgtagtgg tatgctaagc 1860

tggctcatac caacttagaa aagctgattg taaaattttc attttgacag ctggttatta 1920

aatgcagcca ttattaaaaa tcaaatcata caaacttata attaaatcaa ttacatttaa 1980

aacaaaggta ataaatattc aaagcatatc acttcctaat ttgatcttga tgctcttgag 2040

gtaatttacg tccatggtac ctgtgtggtg gaattactat atatgatggt gtgctactgt 2100

gcaccttgtc tcaactccac tcttcgtgat agcatgttgg tagcttgaaa tcagcctggt 2160

gggagtatta ccatggacac tggcaaaagc tacagatccc ggagagccag tggttaaaca 2220

tttaccagca taccactgct agtaatcaag gctaactggt ccagaaatcg cccaggagaa 2280

tgaaatggat gttccatttt tttctactga cattgactag catataaaag gtatagaaac 2340

agcactaaga ctttctgaaa atacctaatg aaaattttac atcttttttt gttttтgттт 2400

ttgtttttga gacagagtct cactctgttg ccaggctgga atgcagtggc gtcatctcgg 2460

ctcactgcaa cctccgcctc ccagtttcaa gcgattctcc tgcctcagcc tcccaagtag 2520

ctgtgactac aggcgcatgc catcacgcac agctaatttt ttgtattttt agtagagacg 2580

ggatttcacc gtgttagcca ggatggtctt gatctcctga cctcatgatc tgcccgtctc 2640

ggcctcccaa agtgctggga ttacaggcgt gagccactgc acccagccaa aaattttaca 2700

tcttttatag agggaaaaaa actctttata ccatggcaag gcctttтcтт tcacaaaaag 2760

ctgggcctac tgaacaattc aagctgtgca gtagtagact gaaagcagga tttgttgagg 2820

agttacagct cctgtccaga gcaaatcctg tagtgataca aggagaatgt aaacttgcca 2880

gcttagacag ggatcagtcc tgagactgct ggcagtagca aatggctatt agagtaactg 2940

tataatggtt ttgcctgcac tttctctatg tatatacaaa tgtacatgta taaatataaa 3000

aattaagtga tcatggttct tggtaacctg tcccaagtgc tgtgattcac acgcctgaca 3060

ctaaaaggtt cttcctggtc cagtcagcca gctgtgacca ccagcagcac agctgagtgc 3120

tgagaatctg gctggaaaga gaaacgtggc tcaagtgctg gctcaccttc tagctgtgtg 3180

gccctgggca ggttactgag gctcttccaa cctcactttt cacatgtaaa atggcatttc 3240

taaaagtacc taccctacct caaaggaatt ctgaaaaaag taagtgaatt tgtataaagc 3300

agagcactca caatatgcct gacacacaaa ctgcttaata aatgttagta atttttaaaa 3360

cctcctcata agcggcttag aaattattca tgtttggtac atatttattg caagtcaagc 3420

agatccaact tttttgaaag ctggtggtct aggagtatag ttttaattat atttgtaaat 3480

actcaaaagt attagatgcc agtctaattt aaatgcagtc tgactgtagc gagtaactga 3540

cctgggcaat gaaaaagcag ttgtattttt cttgtggttt ttcaagaaaa tatccttttt 3600

atacagattt agaaagaaga atcaatggct atatcgaagt tgattgtgac taatttgtta 3660

atacagaaaa caacattaac ac 3682

<210> 682

<211> 5582

<212> DNA

<213> Homo sapiens

<400> 682

atatccagga ctgcgccggg agtgcccctc actgtctcag cctctgtcct gtctgtggca 60

tgtgcatcat tctgaggaga aggctggatt ttgtgctctg ccctgggagc aggtgttgaa 120

ctgcacccac ttgtgcacag tgtcagccct acccccatcg ctggcagctg acgccaagca 180

gaactggcct gcgtaccctt gaaatcctgt tcaagctctg cctgccgctc gggcaggccc 240

caggctgcct cctgccccag gccagcctgg gagcacactt ggtgcctggg agcacacaga 300

gggagcacac ttggtgagcg gagaagcttc tgcgcagcct actctctctc tggggcctca 360

aagggcccag caaggcaggc agggagcatc atgcacctct tccagatgag gcccccagct 420

ggcgagcacc agaacctgga gcctggcccc tcctcagcag atcagacctc ccagtcccca 480

gcacctgtgg agggcacagg accactccct tctagagact ctgtgtctcc aggtgaggcc 540

gagaactcat gtttccccag ctccctgcat ggctctgtta cacaccaggc tcaggacttc   600

agctcggccc cttctagcct gcggctcccg ctctggttgt ggagagtggg tagagcgggc   660

gtcgtgtcgc cctgtgtggg gcagttacag cctgggcttc ctccaagtca gatctcttct   720

caagggaagt atcgcggcgc gtcagttatg tttgcataga ggtccctgct tgaaaaacat   780

tgatttcacc accattgtag ggtgtttggg ttactctctt cttttccatt taacggtatg   840

ttgccaaatt tttacacaca tcttagaatg ttttcttaag ataaaaatcc aagtagtgaa   900

attacctgat caaggaattg gatatatttt ccccaggttg cgcttcagaa aggctgtgga   960

cgaagtgtta ggagcattcc tgtttcaccg cagcccccca gaactgggtc tgcatcaaat   1020

ttgtgtgctt tgccgagtta gtaggtgaat agtggaattg cgcgtgtctt tatgagcaca   1080

gagcgctcat tggccggagg tgcatcttca tgagtacgtt gctcatgggc ccgtccttgc   1140

ctggatagga ggaacccggg acttgattgg tcttgccaca gcctggtggt ctagttgctt   1200

tgtggggtgt gcagtcctgg ggctgcggga ggggagtaac ccttagtaac ctgtgtgtct   1260

gcccctccac agaactgtca gaccttcagc agcctcagct gcctgagcgc agggacagag   1320

gactgcggtc cccagagccc cttcgcccgc cacgtcagca acaccagggc ctggaccgcc   1380

ctgctctcag cctccggccc aggggcgggg accccgctg ggaccccggt ccctgagcct   1440

cttccccctt ccttcgacga ccacctcgcc tgccaggagg acctgtcctg tgaggagtca   1500

gacagctgcg ccctggacga ggattgtggc aggagagcgg agccggctgc agcctggcgg   1560

gaccgcgggg cccctgggaa cagcctctgc tccctggacg gcgagttgga cattgagcag   1620

atagagaaga actgaggggg tgtgggccca ggcagggctg gggtgtgctg gcatcgacag   1680

cccccactct gggcactagg tgggcccttg aaggggagcc caactcgtgg gcctgatgaa   1740

agcttcctga gtggtgtcgg gtcccagaga gggagcccac ctgctgcctg ggggagagcc   1800

tggcctggcc gcgtcataca gcgggtgtgt cagcctctca ccggctcccc gagcgtggca   1860

gccaccaggt ccacagaact actgcagccc agaggacagc tttgaagttt gcgtcttttc   1920

tgcctctttc cctgtgggat gttgggcagt ctctgttgtc cccggcagag ctgggcaccg   1980

ctctgtatcc ccctggtggt gggggctgtc agggagggcc tggggtgggg gccaggggcc   2040

atctgctatg tcagggccct tcttggcctc actcaggttc acttctgggg agtcggcccc   2100

gcagcttctt tcactcagtt ttactccgtg ccttctctcc caggtctccc tgcttcaggc   2160

ttgggaaggt tcgggagatg cttccttctg taacaccaga accatttggc cttaattcca   2220

atgtgagaga cagaatccct ggggtgctgg actggccctc cagagggtaa gccatgtccg   2280

```
gagtctcggg cccaaggaac gatttggagg gtgcttgtta gggcctcccg tgttgggtag 2340

aaatttggtg gatctgttgg ctgaaaagac ggacttgctt gcctctccta cagcatggag 2400

aggctgaccc catggctctg ccaccgttgg ggcagggtta gcagatggca gcccttctct 2460

gtggctgaca ggtcactgag tgataagcat ggttggttcc ggtgagtgta gggatggcac 2520

gataccaggg cagcctcttg aaaacggcct cgggagacgg gagctgcgag caggtgggca 2580

gatgagggcc ctatgcgcac tcaggggtga agggcgtccg ctggccactc tgcaggggcc 2640

cctgcaggat tccaggcacc tcccgtttgt ccttgaggac tgctggctgt aaccagggca 2700

catcacccac ctcaagacaa gcccacgccc ttgtcagctt aggggggagcc cagtcctgag 2760

ggctgcatct ctgttgtagg cccagccacc ggcacaaagc tggattcatg ctccctgccc 2820

ctaccccacc ctggctcctc accctggggc atccgaggag cctagccccc tgagggtttg 2880

ctctcctctc aaggtttgta gctcctctcc ggctgccttg cagacaccac cacatgggct 2940

ctgctctatg ggaatctggc ttttagcgaa tgtggcgtct tctgcaaaca atagcaattg 3000

ggctggctta ggagcaagtg gctcattttc ccataaggct aaaaataact ggtgcgctcc 3060

cttgtgttgg ctgacacgcg cgttcaaagt acttttgtag tcactttgct tttgctcgtc 3120

ttcatggacg agtgaacgcc tcgcttctgc aggttgagtc cagatgcttc tcaccttctt 3180

tctcctcaag aaagatgctt tttgggaaac gttgtttaaa tcttattttt ttactacatc 3240

aaaaggatgg tggttcaagt tcccaatatg tgggtggcac ttcttaaaaa tcagctttaa 3300

ggagctggca gaaagccccc agccccacag ccctgagaga tggtgttgct agctcaggtg 3360

gctgacacat ggggtatgcc gggcactggg caggtcccag agccggggaa ccagctcacc 3420

tctggttgct gtagctcctg ccggaggcat gtctacttgt gatcccggac agccgaaccc 3480

aagagctggt ggctctgagc agacagagac atcttggcct gtccctgcct gggggtcatg 3540

gagaccatgt cttcttagag caaatgtgga ggcggccagg gcagttgttg ggtgaatgtg 3600

gagagcacat ggccatgtct tgcccccgga gtaccactgg gcgtgggggg tcctggcacc 3660

acatgcccgg tgtggccgag ggcacacagc ctctatagca ggccttcctg tggaaggcag 3720

aggcagtgag ggaggtggac ggtgccagct gaggctgagg catgcagcag cccccagcta 3780

cctttgctta gggctggggt gggaggcaca tggtgacagg tatatgtcgt gggactgggg 3840

tgtgggtgac ctgccctcaa accttgcctg ccacctcccc attcaggcct ggtggcagga 3900

agggacaagc tgtggagctg gctgagtcac agccacctcc ccacctcccc gcaagctggt 3960

cccatcgacc agcaagccca gccccagggc gcttagggag aaatgaccca gcctcctcag 4020
```

accccgcctg cctgtcctgt gcccaccacg cagcagtcag gggagaaaat ggtggctatc 4080

ccttctgctt agagaaagaa atggccttta gctggtttca tgtttgtgtt ttgactggag 4140

ggagtagacc ctatctataa ggtgccaccc catcatccaa gctgccacac tgcccggagc 4200

agcctgttcc tgcactccac cctgctggcc ccaggacttc tgatctcagt cctctgggag 4260

ggaggttcgc ctaggaggtg ccccccacat tggtgtcccc atgggcagca ggcagacagc 4320

tcaccccccac cagcatgatg gccccagctg ggggcagtgg caggagcctt acttttgtca 4380

cagccttgcc cacaaaccct gcctctgagg ggagactgag gaagggcaga gctagaagca 4440

agccgtgcca ggccatctgc ctgctcatgg ggtcctaaag cgcgggctaa gcctgcagga 4500

aagccggggc ggtgggggg gcttagtgcc acatgcaccc cactcattcc aaagccacca 4560

aactgccagg ggctgccgtc cacccgtggg gcccaggggc tggggccaca gccttgccat 4620

tttcgttgcc ataccctctt gccttactcg cggtggaggc cggatttgca cgggcagacg 4680

tgcacctggg cccgtgggga gcttgttctg accagacgta cagattttca ttctcagaaa 4740

gccttacttt tcaaccaaat ttttgtagcc agttttgtga atttgtacac tgaaagaaaa 4800

tttaaataaa ggggaagtcc acattaaaaa gaaaacaaaa caaaccctaa ctaacttcca 4860

aatgggtctc ctggtgcggg ggcgtgagtg gccgtgccct gggtgtgctg cctgtctgag 4920

caagcttccc tagctgtgga accccgggcc ccctgctgcg ggctctgcct tggtgtcatg 4980

cctgctgcac ccccgtttcc actgacgtgc cgtctgtggc tatggggtg gtcactggaa 5040

tgacggtcac tccagacgtc agccggcagg gatgcagcag gctggccgcg caccggggct 5100

cgggcaccct ctggccccac actgacaatg atgccacacc ttgccatgtc cacgctgttg 5160

gtcaaacccc tctgtcatgc ctctttaaag agaaagaag agaaagattt ttttttttt 5220

aatggcagac cgaggtggag atcttgtagc ctagatagga tagtctgacc ttctagcata 5280

gtctttttgg caaatgattt gtgttttcag tgtgtgggga agctgtcctg ggggctgggg 5340

cgacagatag cacataggct gtttctgggg ctgcaggggc ttccctgagc tggatgttgt 5400

gggtgttgcc gtgcttcagg aagtgtggcg accagaaagc gtagacccgg ggcccagggt 5460

ctgcccgccc ctgcagcctg gcctccccgc acaggctgtg gcttgcactc cagccgctct 5520

agtctctcag gaatttgctt gttacttgta ctgtgtaaat aaagcttcct ggttcaatac 5580

cc 5582

<210> 683

<211> 4510

<212> DNA

<213> Homo sapiens

<400> 683

aatgtaacag	tttgcaaacc	gagaggagtt	gtgaagggcg	cgggtggggg	gcgctgccgg	60
cctcgtgggt	acgttcgtgc	cgcgtctgtc	ccagagctgg	ggccgcagga	gcggaggcaa	120
gaggggcact	atggcagaca	aagttaggag	gcagaggccg	aggaggcgag	tctgttgggc	180
cttggtggct	gtgctcttgg	cagacctgtt	ggcactgagt	gatacactgg	cagtgatgtc	240
tgtggacctg	ggcagtgagt	ccatgaaggt	ggccattgtc	ttgaataagg	aatctcggag	300
gaaaacaccg	gtgatcgtga	ccctgaaaga	aaatgaaaga	ttctttggag	acagtgcagc	360
aagcatggcg	attaagaatc	caaaggctac	gctacgttac	ttccagcacc	tcctggggaa	420
gcaggcagat	aaccccatg	tagctcttta	ccaggcccgc	ttcccggagc	acgagctgac	480
tttcgaccca	cagaggcaga	ctgtgcactt	tcagatcagc	tcgcagctgc	agttctcacc	540
tgaggaagtg	ttgggcatgg	ttctcaatta	ttctcgttct	ctagctgaag	attttgcaga	600
gcagcccatc	aaggatgcag	tgatcaccgt	gccagtcttc	ttcaatcagg	ccgagcgccg	660
agctgtgctg	caggctgctc	gtatggctgg	cctcaaagtg	ctgcagctca	tcaatgacaa	720
caccgccact	gccctcagct	atggtgtctt	ccgccggaaa	gatattaaca	ccactgccca	780
gaatatcatg	ttctatgaca	tgggctcagg	cagcaccgta	tgcaccattg	tgacctacca	840
gatggtgaag	actaaggaag	ctgggatgca	gccacagctg	cagatccggg	gagtaggatt	900
tgaccgtacc	ctggggggcc	tggagatgga	gctccggctt	cgagaacgcc	tggctgggct	960
tttcaatgag	cagcgcaagg	gtcagagagc	aaaggatgtg	cgggagaacc	cgcgtgccat	1020
ggccaagctg	ctgcgtgagg	ctaatcggct	caaaaccgtc	ctcagtgcca	cgctgacca	1080
catggcacag	attgaaggcc	tgatggatga	tgtggacttc	aaggcaaaag	tgactcgtgt	1140
ggaatttgag	gagttgtgtg	cagacttgtt	tgagcgggtg	cctgggcctg	tacagcaggc	1200
cctccagagt	gccgaaatga	gtctggatga	gattgagcag	gtgatcctgg	tgggtggggc	1260
cactcgggtc	cccagagttc	aggaggtgct	gctgaagggc	gtgggcaagg	aggagctggg	1320
gaagaacatc	aatgcagatg	aagcagccgc	catggggggca	gtgtaccagg	cagctgcgct	1380

cagcaaagcc tttaaagtga agccatttgt cgtccgagat gcagtggtct accccatcct 1440

ggtggagttc acgagggagg tggaggagga gcctgggatt cacagcctga agcacaataa 1500

acgggtactc ttctctcgga tggggcccta ccctcaacgc aaagtcatca cctttaaccg 1560

ctacagccat gatttcaact tccacatcaa ctacggcgac ctgggcttcc tggggcctga 1620

agatcttcgg gtatttggct cccagaatct gaccacagtg aagctaaaag gggtgggtga 1680

cagcttcaag aagtatcctg actacgagtc caagggcatc aaggctcact tcaacctgga 1740

tgagagtggc gtgctcagtc tagacagggt ggagtctgta tttgagacac tggtagagga 1800

cagcgcagaa gaggaatcta ctctcaccaa acttggcaac accatttcca gcctgtttgg 1860

aggcggtacc acaccagatg ccaaggagaa tggtactgat actgtccagg aggaagagga 1920

gagccctgca gaggggagca aggacgagcc tggggagcag gtggagctca aggaggaagc 1980

tgaggcccca gtggaggatg gctctcagcc cccacccccct gaacctaagg gagatgcaac 2040

ccctgaggga gaaaaggcca cagaaaaaga aaatggggac aagtctgagg cccagaaacc 2100

aagtgagaag gcagaggcag ggcctgaggg cgtcgctcca gccccagagg gagagaagaa 2160

gcagaagccc gccaggaagc ggcgaatggt agaggagatc ggggtggagc tggttgttct 2220

ggacctgcct gacttgccag aggataagct ggctcagtcg gtgcagaaac ttcaggactt 2280

gacactccga gacctggaga agcaggaacg ggaaaaagct gccaacagct tggaagcgtt 2340

catatttgag acccaggaca agctgtacca gcccgagtac caggaagtgt ccacagagga 2400

gcagcgtgag gagatctctg ggaagctcag cgccgcatcc acctggctgg aggatgaggg 2460

tgttggagcc accacagtga tgttgaagga gaagctggct gagctgagga agctgtgcca 2520

agggctgttt tttcgggtag aggagcgcaa gaagtggccc gaacggctgt ctgccctcga 2580

taatctcctc aaccattcca gcatgttcct caagggggcc cggctcatcc cagagatgga 2640

ccagatcttc actgaggtgg agatgacaac gttagagaaa gtcatcaatg agacctgggc 2700

ctggaagaat gcaactctgg ccgagcaggc taagctgccc gccacagaga agcctgtgtt 2760

gctctcaaaa gacattgaag ctaagatgat ggccctggac cgagaggtgc agtatctgct 2820

caataaggcc aagtttacca gccccggcc ccggcctaag gacaagaatg ggacccgggc 2880

agagccaccc ctcaatgcca gtgccagtga ccagggggag aaggtcatcc ctccagcagg 2940

ccagactgaa gatgcagagc ccatttcaga acctgagaaa gtagagactg caggatccga 3000

gccaggagac actgagcctt tggagttagg aggtcctgga gcagaacctg aacagaaaga 3060

acaatcgaca ggacagaagc ggcctttgaa gaacgacgaa ctataacccc cacctctgtt 3120

ttccccattc atctccaccc ccttccccca ccacttctat ttatttaaca tcgagggttg 3180

ggggagggggt tggtcctgcc ctcggctgga gttcctttct cacccctgtg atttggaggt 3240

gtggagaagg ggaagggagg gacagctcac tggttccttc tgcagtacct ctgtggttaa 3300

aaatggaaac tgttctcctc cccagcccca ctccctgttc cctacccata taggccctaa 3360

atttgggaaa aatcactatt aatttctgaa tcctttgcct gtgggtagga agagaatggc 3420

tgccagtggc tgatgggtcc cggtgatggg aagggtatca ggttgccggg gagtttccac 3480

tcttctctgg tgattgttcc ttccctccct tcctctccca ccatgcgatg agcatccttt 3540

caggccagtg tctgcagagc ctcagttacc aggtttggtt tctgagtgcc tatctgtgct 3600

ctttcctccc tctgcgggct tctcttgctc tgagcctccc ttccccattc ccatccagct 3660

cctttccccc tgggtttcct tggcttcctg cagcaaattg ggcagttctc tgccccttgc 3720

ctaaaagcct gtacctctgg attggcggaa gtaaatctgg aaggattctc actcgtattt 3780

cccaccccta gtggccagag gagggagggg cacagtgaag aagggagccc accacctctc 3840

cgaagaggaa agccacgtag agtggttggc atggggtgcc agcatcgtgc aagctctgtc 3900

ataatctgca tcttcccagc agcctggtac cccaggttcc tgtaactccc tgcctcctcc 3960

tctcttctgc tgttctgctc ctcccagaca gagcctttcc ctcacccccct gaccccctgg 4020

gctgacctaa atgtgctttc tactgtgagt ccctatccca agatcctggg gaaaggagag 4080

accatggtgt gaatgtagag atgccacctc cctctctctg aggcaggcct gtggatgaag 4140

gaggagggtc agggctggcc ttcctctgtg catcactctg ctaggttggg ggcccccgac 4200

ccaccatacc tacgcctagg gagcccgtcc tccagtattc cgtctgtagc aggagctagg 4260

gctgctgcct cagctccaag acaagaatga acctggctgt gtcagtcatt ttgtcttttc 4320

cttttttttt ttttttgcc acattggcag agatgggacc taagggtccc accccctcacc 4380

ccacccccac ctcttctgta tgtttgaatt ctttcagtag ctgttgatgc tggttggaca 4440

ggtttgagtc aaattgtact ttgctccatt gttaattgag aaactgtttc aataaaatat 4500

tcttttctac 4510

<210> 684

<211> 3594

<212> DNA

<213> Homo sapiens

<400> 684

```
atgcagctcc gagcgagcga gcggcgccca gcccagcgcc tcggccgaac ccctccgcag    60

caggctgcct gctgtttccc ggggagatca tgaaacgagg tcgccttccc agcagcagtg   120

aggattctga cgacaatggc agcctgtcaa ctacttggtc ccagaattcc cgatcccagc   180

ataggagaag ctcctgctcc agacatgaag atcgaaagcc ttcagaggtg tttaggacag   240

acctgatcac tgccatgaag ttgcatgact cctaccagct gaatccggat gagtactatg   300

tgttggcaga tccctggaga caggaatggg agaaaggggt ccaggtgcct gtgagcccgg   360

ggaccatccc tcagcctgtg gccaggccca gaagtacat cgtgtcatca ggctctgagc    420

ctcccgagtt gggctatgtg gacatccgga cgctggctga cagcgtgtgt cgctatgacc   480

tcaatgacat ggatgctgca tggctggaac tgaccaatga agaatttaag gagatgggaa   540

tgcctgaact agatgaatac accatggaga gggtcctaga ggaatttgag cagcgatgct   600

acgacaatat gaatcatgcc atagagactg aggaaggcct ggggatcgaa tatgatgaag   660

atgttgtctg tgatgtctgc cagtctcctg atggtgagga cggcaatgag atggtgttct   720

gtgacaaatg caacatctgt gtgcaccagg cctgttatgg aatcctcaag gtaccagagg   780

gcagctggct gtgccggaca tgtgccctgg gggttcagcc aaaatgtctg ctgtgtccga   840

agaagggtgg agctatgaag cccacccgta gcggaaccaa gtgggtccac gttagctgtg   900

ctctgtggat ccctgaggtg agcattggca gcccagagaa gatggagccc atcaccaagg   960

tgtcacacat tcccagcagc cggtgggcgc tagtgtgcag cctctgcaat gagaagtttg  1020

gggcctctat acagtgctct gtgaagaact gccgcacagc cttccatgtg acctgtgctt  1080

ttgaccgggg cctggagatg aagaccatct tagcagagaa tgatgaagtc aagttcaagt  1140

cctattgccc aaagcacagc tcacatagga aacccgagga gagtcttggc aaggggctg   1200

cacaggagaa tggggcccct gagtgttccc cccggaatcc gctggagccc tttgccagcc  1260

ttgagcagaa ccgggaggag gcccaccggg tgagtgtccg taagcagaag ctgcagcagt  1320

tggaggatga gttctacacc ttcgtcaacc tgctggatgt tgccagggct ctgcggctgc  1380

ctgaggaagt agtggatttc ctgtaccagt actggaagtt gaagaggaag gtcaacttca  1440

acaagcccct gatcacccca aagaaagatg aagaggacaa tctagccaag cgggagcagg  1500

atgtcttatt taggaggctg cagctgttca cgcacctgcg gcaggacctg gagagggttc  1560
```

ggaacctcac ttacatggtg acccgcaggg aaaagattaa acggtctgtg tgcaaagtcc 1620

aggaacagat attcaatctt tacactaagc ttttggagca agaaagagtt tcaggtgtgc 1680

cttcttcctg ctcctcctcc tcactggaaa acatgctttt gtttaacagt ccttctgttg 1740

gccctgatgc tcccaagata gaggacttga agtggcattc tgcattcttc agaaaacaaa 1800

tgggtacttc cttggttcat tcgctgaaaa agccccataa gcgagatcct ttgcagaata 1860

gccctggaag tgaaggcaaa accctgctga agcagccaga cctgtgtggt agaagggagg 1920

ggatggtggt cccagagagc tttttgggtt tagaaaagac ctttgcagaa gcacgtctca 1980

tatcagcaca acagaaaaat ggtgtggtga tgccagacca tgggaaaaga agagacaatc 2040

gttttcattg tgatctcatt aaaggagact taaaggacaa atcttttaaa cagagtcaca 2100

agcctctcag gtccacagat gtgtcccaga ggcatctgga caacacaaga gctgccacct 2160

cccctggagt ggggcagtca gcacctggca caaggaagga gatagtgccc aagtgcaatg 2220

gctccctaat caaagtaaac tataatcaga ctgcagtcaa agtgcctaca acacctgcca 2280

gcccagtgaa aaactgggga ggattccgga ttccaaagaa gggggaacgg cagcagcagg 2340

gagaggccca cgatggggcc tgccaccagc actcagacta cccatatttg ggcttaggcc 2400

gagttccagc caaggaaagg gcaaaaagca aattaaaatc cgacaatgag aatgacgggt 2460

atgtccccga tgtggaaatg agtgactcag agagtgaggc atcagaaaag aaatgtatac 2520

acaccagcag cactatcagc agaaggacag acattatcag gagaagcatc ttggcttctt 2580

gatgcaacag agatgatgcg gaagcccttt gggctcgtca ttgggtttgc tagaggagag 2640

ctctgatgtg ggggagaagc agaaacccat taatcctgag ctacacaaac acatttactt 2700

gcaattcaga ttaatttttt tccagagtca tttttaaatc atttttgtga gaagtttgtg 2760

ttatttgcaa cttgttgagg aaacagaaga gtagattgta accataagac actgctaaga 2820

ctagaacccg aactgaacac taaaataaaa atgaaatgtt ttaaagaagg caaggcttaa 2880

ataagcctca tgaattttta tagccctctg cattcttccc aaagcacaaa ctcatggtta 2940

cctgaatata gggaaccaga tatggttctt gagaaaccct catggtacca ttcacagccc 3000

ataaagttta ttttctagga ctgtggtaga tcttgaaatc atatttatat ttggccctca 3060

aggctatttt tgttgcatta tagcatatag gcagcagctc tgaagcttca gtaacactaa 3120

gaaatttatg tgtaaatata gcagtcaggg aagagaattt taaaaaaggt cattattgaa 3180

gaagctgagg ggacagggta gagctgctgc aatatggaga tttagggtaa tatggcaagg 3240

tcctgctgct tgaagcctgt gagtgggttg tggatatggg actggtggag agtgagactg 3300

ttaggaaagt tgtatctatg aataagggca gttgaagtag aatttttacc agtccacttg 3360

accttcttct tccctaacca ctggctcttg agccagcttg ggatttccct ggccattgcc 3420

aatacctggc catctggctt ccaatagtac agtggctact caagttcaag cgaagaactt 3480

ccagactctg gtgactgtta cttcccagag ccaaccacta gtgcatatgt tagggaatct 3540

gggcttccaa catgaatgga ttccttaaga aaaggaaaa aaaaaaaaa aaag   3594

<210> 685

<211> 3860

<212> DNA

<213> Homo sapiens

<400> 685

ttatttatct tgcaacaata tctgtaaacc atttgccaga ttgagtggtc caaagtcttc 60

ggagaagttc tcatattcga gttcattatc tatgctgaaa taatgtacat ttgatgcact 120

ctttggtctg ctgtagagaa tggcaaaacg aaggcgatcg gtgatgtcca ggtacacgtc 180

gtcctgcggg tcccagcggc gcgggtcctg cagcgtggag ctgcgcatct tcttcacacc 240

ctgcaaggtc aaagagcagc gctgcgagca gaggggcgcg gcggcccagc tcgaccgcca 300

cttgcttttc cgcttcctgg aggcggccgc agccggtcag ggagcaacga ccacggcccc 360

gcgcgcgccc gccgaggctc gcgccagcgc cgcgcgggct ctcaggacgg cgggcacaga 420

gcggccttgc ggggacggcc ggagccagcg gagcccggaa ggaggcggtg gtgcaggagc 480

cagaggaggg gcctggccca cagcgcctgc cccgctccct cccgcaaccg ccctcccttt 540

gctttttaa accatgaact gaagggctat atcatactga catcaacaaa gtgttagatg 600

aataagtcat catgctcttg tcatagcaac cacctggatc ttaaccttct ctccagtctc 660

tggaaattcg accaaataag tgttacttcg agtatgactt tattaccaaa tgacagtatt 720

tttgaagcac tcatttagga tccattaaaa gttggaggtt gtgaccattt gatattgaaa 780

gtcatgcctg cttggagaca agttaatgtt gacatattgc tttttcacca actctcccaa 840

taccccaacc ttggaaacat gggagcacaa gatagttaaa tagatagttt aaaagatggc 900

atttcttttt tctgttctat gtgggctttc caaagaaaag tcttggagaa gctaaacaat 960

gtgtgtagaa gatcacacag ggatatcaca agtgataaat tttataccca gtgtcatccc 1020

aaagccaata tgcagcttcg cactcctcgg caacggaaca ggcctctctc cttcaccaaa 1080

gagagcttcg tgaagcttca tccctaagtt ttgggttggg ggtaaaataa agaagaggac 1140

tgatgggttg ttcttgagct tactactcat tcatacatct tcttgccctt tctgtttggt 1200

gggatttccc ctaatcattt atatccttct ggtgtccaca aggagaccta aattcccaat 1260

tagataggct ttatgaaatt ttaaaggtaa atgtatatat tagaattagt ttaggagaaa 1320

ggagagaaga gtaaaagaag ataggtaaag attcatattt gtccttaaag attcaagctt 1380

ctggatgtca caaatatttt gattaatggg gacctcaaga ataattttgt tcaccactgt 1440

cccaatgctt gccccccgtc cacaatattt ctgtccagtg aatgcattgt attttctttt 1500

ctccagtttc tgttggaata cccgtatctg ataggaaaca cacgtctgaa ggcatgcagt 1560

gaggatgttg atttcccttg ccttttctta tcatttatta atagattcag aaacaattta 1620

ctgaatgttt gctctttgct agagacctgg ttcttgctaa gaaatgcaac ctttcatatg 1680

agacagtctt gctcttggaa tttgcttgta tagtcaccac actatccatg aacacttaga 1740

cccctgttta taataatttt aaaaatccta aagacaactg attagaaaag tcacttcatc 1800

caggttgggc cactcagatc ccttcttcta tgaggtaaac ttgagtccca gagcccctcc 1860

ttattctctt tgcggtcccc gagtgaaatg ctcatgtaaa atttaatctg ggtagccata 1920

tctgaaataa gtgaaaggta ggctgagaag gccatgcttc taagaaaaag taataaagca 1980

gactcctaga gagaaacaac aatgattgac cacgtggcac cagagacgat ggagactgtt 2040

atctaccctt tcagcctgag gtggtttccc tctagttatt ggcatctgct tctcaagaga 2100

tcttctcctt aagttccgga gatactatct tattcttcct tccccagtcc tcctgcaatt 2160

gtctggctag tctgagagtg tttgtatcta caactcaatg atctctgcct aggtctttgt 2220

tattcaggta gccacaggaa tagactcttt tgacacatct gaaaagatat gtccatggcc 2280

gcttctctgt gggaggaaag taaagggctc tacttttctc agagaggtta tttatttttc 2340

attgttgaat cccttttgct ccttctacct ttactgttga actccaatgt gtgtggaggg 2400

tgttgggcat ggagaaagtt ttattttctc acccatatta gctaccattt tgaccaccat 2460

ttctgcataa gttgggatat acagacaact agaggaaggt ttaaagagca gtctactaat 2520

tgcctccaag atcatctaaa ctttacagag tcaaggctgt gtggaaaagt aagctattct 2580

gtaatgttgg atcaaacaaa aggggagatt ctcactggtc atgcttattg aaaacaaaac 2640

ccaacaaatg aggataacta aattacaatg accaaacagg gttgtcatga tgccacagtt 2700

```
actcccctga aattcctgta ccttttttact tataagaatt ccaggagctg gtttcatcac  2760

aaactgataa tgactattcc aagaagtgct gtagccttta gccaatcatc tgttagctcc  2820

tttctgttga ccaatggtat ttctggatga acaggctgag accaccttgg tatacctctt  2880

cgttttgtcc ttaaaaatct gcttgtaacc tccccaactg aaagcacttc tctgacgtag  2940

tttgcatatg tgtttcccgg gttacactcc tcaaatttgg ccaaaacaaa ttctttactt  3000

atgctaattt tgccttagac ttttatttca gatcaacatt atggatgcct tagatggatg  3060

tgttttaggt gacccagttg ttcaatgggt cgcctccatt ctttatctct ttctaaaacc  3120

tcttattctt cccttagtct tattctttta agtctttccc ccatcctaaa ttctagtcct  3180

cattttttgt ctattttagt tactcttccc taaatacata tccaatcccg aatctcctct  3240

gaattttatg gtgagattat tatccccagc tcctcacagc tgcttgttta tgctcctggg  3300

gaaagagaaa ctatggcatc agtcatggag tcacctctgc agcctggctt tctcccttcc  3360

ctttcgtttg agctccagct ataagctcgt tcccagaagc tatacttgct ttggcgctta  3420

tactcattct gttccctcta tgtaaagtaa atattctcct acacttccta actttgtagc  3480

ttacaatcct ctgtccaaac ttggtggttc ccagagtact tgcatcttat ttgattgttt  3540

ggtcactgca cctgagaatt tgccgtgtgt aattctgcat aaagaaatac tgtatggtaa  3600

tatattcaac ataccatctc acatgcttac ctgatacatc tgcttgtatg gctgtgaagt  3660

ttaaataact taaaatacaa aaaaattagg gctattggat ttgggaaata caagagttgt  3720

aaaatgacta attaaataat acaacagtaa atgattttat ggcttctagt tatttttcaa  3780

gctggaaatt atttggcata taagaaaatg caagaattca agcaagatat ttgtcataaa  3840

ataaaatgat taaggtgggg                                               3860
```

<210> 686

<211> 5131

<212> DNA

<213> Homo sapiens

<400> 686

```
ccaacaacaa aacagcgatg ccacggcgct aacggcgccc ggtgcctccc gggctccctc    60
```

```
cccgccccat acctcctcgg gccgccgccc ccaccccccc aagcccgggc cgagagcccc    120

cccaaatagc ccggccgcgg gctccgagcg cgatcggcaa caatgtttac gttccgggga    180

ttatgacgtc gacgcctccc ccccccaca actgctgaaa atggtttcct aggactttgc    240

aaacggatct gcctaagtgt tggtgcaaaa ctttgtagat ctcggctctg gcttgcttta    300

tttatttatt ttttggtttg ttttctttgg tcttccctcc ttccccctc ggccaaaatg    360

caggggcag gagtgttgac aattaattgg tgaactctcc taaaaaatg gaggcagaga    420

aagactctgg aagaagattg cgcccgattg accgccagcg atacgacgag aacgaggact    480

tgtcggacgt ggaggagatc gtcagcgtcc gcggcttcag cctggaggag aagcttcgca    540

gccagctgta ccaggggggac ttcgtgcacg ccatggaggg caaagatttc aactatgagt    600

acgtacagag agaagctctc agggttcccc tgatatttcg agaaaaggat ggactgggaa    660

ttaagatgcc tgaccctgat ttcacagtcc gagacgtcaa actcctagtg gggagccggc    720

ggcttgtgga cgtgatggat gtgaacaccc agaagggcac ggagatgagc atgtcccagt    780

ttgtgcgtta ctacgagacg cccgaggccc agcgggacaa gctgtacaac gtcatcagcc    840

tagagttcag ccacaccaag ctggagcact tggtcaagcg tccgactgtg gtagacctgg    900

tggactgggt ggacaacatg tggccccagc atctgaagga gaagcagaca gaagccacga    960

acgccattgc agagatgaag tacccgaaag tgaaaaagta ctgtctgatg agcgtgaaag   1020

gttgtttcac cgacttccac atcgactttg gaggcacttc cgtttggtac catgttttcc   1080

ggggtgggaa gattttttgg ctgattcctc caacgctgca caatttggcg ctgtacgagg   1140

agtgggtgct gtcaggcaaa cagagtgaca tctttctggg agaccgtgtg gaacgatgcc   1200

aaagaattga gctgaagcag ggctacacat ttttcatccc ttccggttgg atccatgccg   1260

tctacacccc tgtagactct ttggtgttcg gcggaaacat cctgcacagc tttaacgtgc   1320

ccatgcagct gcggatctac gagatcgagg acaggacgcg ggtgcagccc aaattccgtt   1380

accccttcta ctatgagatg tgctggtatg tcctggagag atacgtgtac tgtgtgaccc   1440

agcgctccca cctcactcag gaataccaga gggagtcgat gcttattgat gccccgagga   1500

agcccagcat agacggcttc tcttcggatt cctggctgga gatggaggag gaggcctgtg   1560

atcagcagcc tcaggaggag gaggagaagg acgaggaggg cgagggcagg gacagggcac   1620

ccaaaccgcc caccgatggc tccacttcac ccaccagcac gccctctgag gaccaggagg   1680

ccctcgggaa gaagcccaaa gcacctgccc tgcgattcct caaaaggact ttgtctaatg   1740

agtcggagga aagtgtgaag tccaccacat tggccgtaga ctaccccaag accccaccg   1800
```

```
gctctcccgc cacggaggtc tctgccaaat ggacccatct cactgagttt gaactgaagg   1860

gcctgaaagc tctggtggag aaactggaat ccctcccgga gaacaagaag tgtgtccccg   1920

agggcatcga ggaccccag gcactcctgg agggtgtgaa gaacgtcctg aaggagcacg   1980

cagatgatga ccctagtctg gccatcactg gggtccctgt ggtgacttgg ccaaagaaga   2040

ctccaaagaa ccgggctgtg ggtcggccca aggggaagct gggcccggcc tccgcggtga   2100

agttggccgc caaccggaca acggcaggag ctcggcggcg ccggacgcga tgccgcaagt   2160

gcgaggcctg cctgcggacc gagtgcggag agtgccactt ctgcaaggac atgaagaagt   2220

tcggggggccc cgggcgcatg aagcagagct gcatcatgcg gcagtgcatc gcgccagtgc   2280

tgccccacac cgccgtgtgc cttgtgtgtg gcgaggcggg gaaggaagac acggtggaag   2340

aggaggaagg caagtttaac ctcatgctca tggagtgctc catctgcaat gaaatcatcc   2400

accctggatg ccttaagatt aaggagtcag agggtgtggt caacgacgag cttccaaact   2460

gctgggagtg tccgaagtgt aaccacgccg gcaagaccgg gaaacaaaag cgtggccctg   2520

gctttaagta cgcctccaac ctgcccggct ccctgctcaa ggagcagaag atgaaccggg   2580

acaacaagga agggcaggaa cctgccaagc ggaggagtga gtgtgaggag gcgccccggc   2640

gcaggtcgga tgagcactcg aagaaggtgc cgccggacgg ccttctgcgc agaaagtctg   2700

acgacgtgca cctgaggaag aagcggaaat acgagaagcc ccaggagctg agtggacgca   2760

agcggctcaa acctggcaaa gaagataagc ttttcaggaa aaagcggcgg tcctggaaga   2820

acgccgagga ccgcatggcg ctggccaaca gcccctccg gcgcttcaag caggaacccg   2880

aggacgaact gcccgaggcg ccccccaaga ccagggagag cgaccactcc cgctccagct   2940

ccccaccgc gggacccagc accgaagggg ccgagggccc ggaggagaag aagaaggtga   3000

agatgcgccg gaagcggcgg cttcccaaca aggagctgag cagggagctg agcaaggagc   3060

tcaaccacga gatccagagg acggagaaca gcctggccaa cgagaaccag cagcccatca   3120

agtcggagcc tgagagcgag ggcgaggagc ccaagcggcc cccgggcatc tgcgagcgtc   3180

cccaccgctt cagcaagggg ctcaacggca cccccgggga gctgcggcac cagctggggc   3240

ccagcctgcg cagcccgccc cgtgtcatct cccggccccc accctccgtg tccccgccca   3300

agtgtatcca gatggagcgc catgtgatcc ggccaccccc catcagcccc cgcctgact   3360

cgctacccct ggacgatggg gcagcccacg tcatgcacag ggaggtgtgg atggccgtct   3420

tcagctacct cagccaccaa gacctgtgtg tgtgcatgcg ggtctgcagg acctggaacc   3480

gctggtgctg cgataagcgg ttgtggaccc gcattgacct gaaccactgc aagtctatca   3540
```

```
cacccctgat gctgagtggc atcatccggc gacagcccgt ctccctcgac ctcagctgga   3600

ccaatatctc caagaagcag ctgagctggc tcatcaaccg gctgcctggg ctccgggact   3660

tggtgctgtc aggctgctca tggatcgcgg tctcggccct ttgcagctcc agttgtccgc   3720

tgctccggac cctggatgtc cagtgggtgg agggactaaa ggatgcccag atgcgggatc   3780

tcctgtcccc gcccacagac aacaggccag gtcagatgga caatcggagc aagctccgga   3840

acatcgtgga gctgcgcctg gcaggcctgg acatcacaga tgcctccctg cggctcatca   3900

tccgccacat gcccctgctc tccaagctcc acctcagtta ctgtaaccac gtcaccgacc   3960

agtctatcaa cctgctcact gctgttggca ccaccacccg agactcctta accgagatca   4020

acctgtctga ctgcaataag gtcactgatc agtgcctgtc cttcttcaaa cgctgtggaa   4080

acatctgtca tattgacctg aggtactgca agcaagtcac caaggaaggc tgtgagcagt   4140

tcatagccga gatgtcttct ttccaaggga gaagctgttc aaccacccgt ttgggggatg   4200

agtgagccga cactttcctt tggtctttct gaatcgtaac tgcactgctt tctggaccat   4260

ttctaaggcg gcctttacaa gaagacattc ctgtcggaga ggagggtgga cttcggagaa   4320

attctcatac tgaagcatga gcttaggagt ttctgttagt ggtagtggtg ttttggacac   4380

ttcattcctt gcaacaccga ggttttgggt gttgacataa agtggaccac acaccacatc   4440

tgctgccgtc ttgacacttt tttttgtttg gttggttttg ttacatctta cattatgcag   4500

aactatttttt gtacaaattg tttaaaagtt atttatgcaa ggtttgaatg cataccagtg   4560

tttttattgt tttgagattg ccaattttcc tgatttcctt aaggtaggag agaatttaac   4620

gtgtacttca tcgacacaac ccatctacaa atgtgcccag atctaacaaa gtaggctaag   4680

accttccact taaaagcatg tttaactgga agttgagagt ctgctttgta cctcaagagt   4740

tacatgagca tgttgtggat aaatgtaaat tatagtcaaa gtaagatact ctgccaagct   4800

tcctctgtag agaattcact tttctcaaat tttaaaattt cgacttcagc ctttgcactc   4860

aggaggttct gctccagcat gagctcttgt acttacatag atctaattta tacagtgagt   4920

caagacgtag aataaatgct cccacatagc ctttcttttg cttttgcttc tctcctctga   4980

agtgtgagtt gagttctcat ttaggtttgt aacatggcta tttcctagtt gtaaagttct   5040

gcatttataa gtgccattgt tgtaaggtgg tgtttcctag accttccctg atgcgatttt   5100

acctttgttg aatttgtata aacaattgta c                                  5131
```

<210> 687

<211> 5592

<212> DNA

<213> Homo sapiens

<400> 687

gactgcttgt catgaagatg gtacagtggg agcctgtttc ggaagagcca aggaagagga   60

tgtggaaatg gagtagagat tgctaaaaaa ctgaacatcc acaccttggg gatgggatgc   120

actactagtg tgattctgtt taaaggcatc cgcaccgttt ttgaaagaaa ctgtgcttat   180

atgtgcaaac agcaaggaga gaataatgcc cttgaatata cagcatacaa ttggacaaaa   240

gaagattcag aactattgat ctcctcctgg ctggcaaagc caaagctaat tgagccactc   300

gactatgaaa atgtcatcgt ccagaagaag actcagatcc tgaacgactg tttacgggag   360

atgctgctct tcccttacga tgactttcag acggccatcc tgagacgaca gggtcgatac   420

atatgctcaa cagtgcctgc gaaggcggaa gaggaagcac agagcttgtt tgttacagag   480

tgcatcaaaa cctataactc tgactggcat cttgtgaact ataaatatga agattactca   540

ggagagtttc gacagcttcc gaacaaagtg gtcaagttgg ataaacttcc agttcatgtc   600

tatgaagttg acgaggaggt cgacaaagat gaggatgctg cctcccttgg ttcccagaag   660

ggtgggatca ccaagcatgg ctggctgtac aaaggcaaca tgaacagtgc catcagcgtg   720

accatgaggt catttaagag acgatttttc cacctgattc aacttggcga tggatcctat   780

aatttgaatt tttataaaga tgaaaagatc tccaaagaac caaaaggatc aatatttctg   840

gattcctgta tgggtgtcgt tcagaacaac aaagtcaggc gttttgcttt tgagctcaag   900

atgcaggaca aaagtagtta tctcttggca gcagacagtg aagtggaaat ggaagaatgg   960

atcacaattc taaataagat cctccagctc aactttgaag ctgcaatgca agaaaagcga   1020

aatggcgact ctcacgaaga tgatgaacaa agcaaattgg aaggttctgg ttccggttta   1080

gatagctacc tgccggaact tgccaagagt gcaagagaag cagaaatcaa actgaaaagt   1140

gaaagcagag tcaaactttt ttatttggac ccagatgccc agaagcttga cttctcatca   1200

gctgagccag aagtgaagtc atttgaagag aagtttggaa aaaggatcct tgtcaagtgc   1260

aatgatttat ctttcaattt gcaatgctgt gttgccgaaa atgaagaagg acccactaca   1320

aatgttgaac ctttctttgt tactctatcc ctgtttgaca taaaatacaa ccggaagatt   1380

```
tctgccgatt tccacgtaga cctgaaccat ttctcagtga ggcaaatgct cgccaccacg 1440

tccccggcgc tgatgaatgg cagtgggcag agcccatctg tcctcaaggg catccttcat 1500

gaagccgcca tgcagtatcc gaagcaggga atattttcag tcacttgtcc tcatccagat 1560

atatttcttg tggccagaat tgaaaaagtc cttcagggga gcatcacaca ttgcgctgag 1620

ccatatatga aaagttcaga ctcttctaag gtggcccaga aggtgctgaa gaatgccaag 1680

caggcatgcc aaagactagg acagtataga atgccatttg cttgggcagc aaggacattg 1740

tttaaggatg catctggaaa tcttgacaaa aatgccagat tttctgccat ctacaggcaa 1800

gacagcaata agctatccaa tgatgacatg ctcaagttac ttgcagactt tcggaaacct 1860

gagaagatgg ctaagctccc agtgatttta ggcaatctag acattacaat tgataatgtt 1920

tcctcagact tccctaatta tgttaattca tcatacattc ccacaaaaca atttgaaacc 1980

tgcagtaaaa ctcccatcac gtttgaagtg gaggaatttg tgccctgcat accaaaacac 2040

actcagcctt acaccatcta caccaatcac ctttacgttt atcctaagta cttgaaatac 2100

gacagtcaga agtcttttgc caaggctaga aatattgcga tttgcattga attcaaagat 2160

tcagatgagg aagactctca gccccttaag tgcatttatg gcagacctgg tgggccagtt 2220

ttcacaagaa gcgcctttgc tgcagtttta caccatcacc aaaacccaga attttatgat 2280

gagattaaaa tagagttgcc cactcagctg catgaaaagc accacctgtt gctcacattc 2340

ttccatgtca gctgtgacaa ctcaagtaaa ggaagcacga agaagaggga tgtcgttgaa 2400

acccaagttg gctactcctg gcttcccctc ctgaaagacg gaagggtggt gacaagcgag 2460

cagcacatcc cggtctcggc gaaccttcct tcgggctatc ttggctacca ggagcttggg 2520

atgggcaggc attatggtcc ggaaattaaa tgggtagatg gaggcaagcc actgctgaaa 2580

atttccactc atctggtttc tacagtgtat actcaggatc agcatttaca taatttttc 2640

cagtactgtc agaaaaccga atctggagcc caagccttag gaaacgaact tgtaaagtac 2700

cttaagagtc tgcatgcgat ggaaggccac gtgatgatcg ccttcttgcc cactatccta 2760

aaccagctgt ccgagtcct caccagagcc acacaggaag aagtcgcggt taacgtgact 2820

cgggtcatta ttcatgtggt tgcccagtgc catgaggaag gattggagag ccacttgagg 2880

tcatatgtta agtacgcgta taaggctgag ccatatgttg cctctgaata caagacagtg 2940

catgaagaac tgaccaaatc catgaccacg attctcaagc cttctgccga tttcctcacc 3000

agcaacaaac tactgaagta ctcatggttt ttctttgatg tactgatcaa atctatggct 3060

cagcatttga tagagaactc caaagttaag ttgctgcgaa accagagatt tcctgcatcc 3120
```

```
tatcatcatg cagtggaaac cgttgtaaat atgctgatgc cacacatcac tcagaagttt   3180

cgagataatc cagaggcatc taagaacgcg aatcatagcc ttgctgtctt catcaagaga   3240

tgtttcacct tcatggacag gggctttgtc ttcaagcaga tcaacaacta cattagctgt   3300

tttgctcctg gagacccaaa gaccctcttt gaatacaagt ttgaatttct ccgtgtagtg   3360

tgcaaccatg aacattatat tccgttgaac ttaccaatgc catttggaaa aggcaggatt   3420

caaagatacc aagacctcca gcttgactac tcattaacag atgagttctg cagaaaccac   3480

ttcttggtgg gactgttact gagggaggtg gggacagccc tccaggagtt ccgggaggtc   3540

cgtctgatcg ccatcagtgt gctcaagaac ctgctgataa agcattcttt tgatgacaga   3600

tatgcttcaa ggagccatca ggcaaggata gccaccctct acctgcctct gtttggtctg   3660

ctgattgaaa acgtccagcg gatcaatgtg agggatgtgt caccttccc tgtgaacgcg    3720

ggcatgactg tgaaggatga atccctggct ctaccagctg tgaatccgct ggtgacgccg   3780

cagaagggaa gcaccctgga caacagcctg cacaaggacc tgctgggcgc catctccggc   3840

attgcttctc catatacaac ctcaactcca aacatcaaca gtgtgagaaa tgctgattcg   3900

agaggatctc tcataagcac agattcgggt aacagccttc cagaaaggaa tagtgagaag   3960

agcaattccc tggataagca ccaacaaagt agcacattgg gaaattccgt ggttcgctgt   4020

gataaacttg accagtctga gattaagagc ctactgatgt gtttcctcta catcttaaag   4080

agcatgtctg atgatgcttt gtttacatat tggaacaagg cttcaacatc tgaacttatg   4140

gattttttta caatatctga agtctgcctg caccagttcc agtacatggg gaagcgatac   4200

atagccagtt taacaaagtg tgtggctctt ctccttcctg cttggaacag gaatgatgca   4260

tgccagattg cagcagctgg gcagcctgga taactctctc acttttaacc acagctatgg   4320

ccactcggac gcagatgttc tgcaccagtc attacttgaa gccaacattg ctactgaggt   4380

ttgcctgaca gctctggaca cgctttctct atttacattg gcgtttaaga accagctcct   4440

ggccgaccat ggacataatc ctctcatgaa aaaagttttt gatgtctacc tgtgttttct   4500

tcaaaaacat cagtctgaaa cggctttaaa aaatgtcttc actgccttaa ggtccttaat   4560

ttataagttt ccctcaacat tctatgaagg gagagcggac atgtgtgcgg ctctgtgtta   4620

cgagattctc aagtgctgta actccaagct gagctccatc aggacggagg cctcccagct   4680

gctctacttc ctgatgagga caactttga ttacactgga aagaagtcct ttgtccggac    4740

acatttgcaa gtcatcatat ctgtcagcca gctgatagca gacgttgttg gcattggggg   4800

aaccagattc cagcagtccc tgtccatcat caacaactgt gccaacagtg accggcttat   4860
```

taagcacacc agcttctcct ctgatgtgaa ggacttaacc aaaaggatac gcacggtgct　4920

aatggccacc gcccagatga aggagcatga gaacgaccca gagatgctgg tggacctcca　4980

gtacagcctg gccaaatcct atgccagcac gcccgagctc aggaagacgt ggctcgacag　5040

catggccagg atccatgtca aaaatggcga tctctcagag gcagcaatgt gctatgtcca　5100

cgtaacagcc ctagtggcag aatatctcac acggaaagaa gcagtccagt gggagccgcc　5160

ccttctcccc cacagccata gcgcctgcct gaggaggagc cggggaggcg tgtttagaca　5220

aggatgcacc gccttcaggg tcattacccc aaacatcgac gaggaggcct ccatgatgga　5280

agacgtgggg atgcaggatg tccatttcaa cgaggatgtg ctgatggagc tccttgagca　5340

gtgcgcagat ggactctgga aagccgagcg ctacgagctc atcgccgaca tctacaaact　5400

tatcatcccc atttatgaga agcggaggga ttttgagagg ctggcccatc tgtatgacac　5460

gctgcaccgg gcctacagca aagtgaccga ggtcatgcac tcgggccgca ggcttctggg　5520

gacctacttc cgggtagcct tcttcgggca ggtgagcctc ctgtccattc tgcagactgt　5580

cctaagtcct tt　5592

<210> 688

<211> 4107

<212> DNA

<213> Homo sapiens

<400> 688

gaacatgctc tactatacgc ggggtttcca gtccatgggc atgtacagcg tcatgatcca　60

gaaggtcatt ttgcatgatg ttctgaagtt cttgtttgta tatatcgtgt ttttgcttgg　120

atttggagta gccttggcct cgctgatcga gaagtgtccc aaagacaaca aggactgcag　180

ctcctacggc agcttcagtg acgcagtgct ggaactcttc aagctcacca taggcctggg　240

tgatctgaac atccagcaga actccaagta tcccattctc tttctgttcc tgctcatcac　300

ctatgtcatc ctcacctttg ttctcctcct caacatgctc attgctctga tgggcgagac　360

tgtggagaac gtctccaagg agagcgaacg catctggcgc ctgcagagag ccaggaccat　420

cttggagttt gagaaaatgt taccagaatg gctgaggagc agattccgga tgggagagct　480

gtgcaaagtg gccgaggatg atttccgact gtgtttgcgg atcaatgagg tgaagtggac　540

tgaatggaag acgcacgtct ccttccttaa cgaagacccg gggcctgtaa gacgaacaga　600

tttcaacaaa atccaagatt cttccaggaa caacagcaaa accactctca acgcatttga　660

agaagtcgag gaattcccgg aaacctcggt gtagaagcgg aacccagagc tggtgtgcgc　720

gtgcgctgtc tggcgctgca ggcggagtca ccgactctgt gcagagaggc tttgagggat　780

gatggagtcc ggctctgctg gcctagaagc agagtgcacc ctcgtgctca gtgctcagtg　840

ggtgtctgaa ctgaggggca gttgtcaatt tgtctgagtg ggaaacatcc tggattttgt　900

tacttggcaa acagctggtg taaacctaca gccagcagca gtctggagcc tgggagcctc　960

ctgaagtccc gggtgaagcc tctggtttta ccaattgcag gtcggcttgg ctgggagaga　1020

tggatggcgg gaaaggggca gcagtcttga ggagcaggga gaggagtctt tcctcctgcc　1080

agcttccccc gtcagcccca accccagccc acacattgta ccatctcttc tgctgtgact　1140

gggttgcctg aatttgtggg agacccgtga tcccatccca gagtgtgcgg gggacggagg　1200

taagctggat atcctggggg aggaggggaa tgcgctctgg aaacaccctt ccggaaccct　1260

tcggggaaaa ggagaccatc cttggagtga acgtcccctg cacccccaag gttcaaactg　1320

tctcaagctg agagatgttt ttagtagcag aattaacaca gggttttaac ttgcaatacg　1380

gaaaagacat ttcagttgag aatgaaaatt actacaatga agtttgtgat tttaaaagtg　1440

gagacagact gggggctttg gggctggatg taagtattat atatttggcc tcagggtgcc　1500

cagagcaaga caaaaagctt ttcttcacac acacaaaagt ctgcatgaga cactccgggc　1560

aagtcctgct gggccgccgc gatctgggtg aaaggtcctg gctcttttcc tcgtcctgac　1620

ctcacagtag cgcatgcctg tgtgctggga tcgtggcttt cgctgaagca gaaatagcag　1680

ctgctcgatc gatatcatct tggaactcag cagttagtcg catacctcag tacgtctcag　1740

tgggggaatt taacaaaatg cctcaactgc tttggtacga agtatttttt ttttaatttt　1800

aactgtgaat tttgaagctg aaggggaagc ttgtgagaga aaagcatttg ccaagacttt　1860

gagcttattt ttaggtcctc gtcctctgat gttctctttc tgaaatgaca cggagtcagt　1920

ctcggggggca gaggtgaagt ggagacggaa ggattttcca ggtgactggg gccgaaacca　1980

ccagaaaatc cactctgccg ccgttatctg gtgaaaggat tcatgtaaaa atgttcgagg　2040

tggaattata aaaatagtaa ccataaatgt taatcttaaa tggcagaaat agaaatttgg　2100

ccttcagata acatggcgat agataagttc atctggcttg aggcaaactg aagagtcggg　2160

gcctagcagt gcactctggg ccagttctc tgccctgggc cactctgtgt gccagactag　2220

●

```
ctggaccgat agagactttg tgcccctgat ggggccgatt ggggagaggt gggctggggt   2280

gtgcaggctt cacaatccac agcagcccct gccctcccag ctgacccagg gagtaatcgc   2340

gtgctctaag ccacagtggt cggggctggg catgggcctc tggagaagag aagatttgag   2400

gagaactgtc ctagaggcag gaggagcaga tgtgtttcag aatgggcaga attaggaaat   2460

tgagaaagat tttggctcaa cagaatccag caactgctcc agatgttgga gatgtttaag   2520

cagaagctgg ttgagcactt aatgaggaat gttgttgaaa atggtcattg gaagaagttt   2580

aaggtccctt ttagcctgga gattgtacaa atcagcattc cacatctgga gttagctacc   2640

cgcattaagc ctgaacagac atcttggtct gaaaggaagt ggtttggatt catgatgcca   2700

agctccacac tatggagctg ggaattccag aattgctttg actcagatat taatggagaa   2760

agtcatatcc attaatggat aaagccgtat ctgttatgga taaagccata tccagagttg   2820

ctttgactcg gatgttaatg gataaagcca attattgatt tctatttgcc taacctgcca   2880

gcttttgtcc aagtggggaa tggagagcca tagggatgtt tgtcatctca catgttttgg   2940

tgatctgctg tctgtgggtc tggacggaat ttgttggcaa gaccattttc tgtattggat   3000

attcttccca acagtgtcca ccccaaaagg ctttcagcca aaacatctga gcctaggtag   3060

gtttaccaag ggaagccata agtcaagaag catcagagtg aaaaggagca cttccttcat   3120

tttacgcccg gaggctaatg ctccgagagg aatgtgtact tgggcaaagt catgcaggaa   3180

ggtcatatca gagctgtgga ggctggagtg tcctgattct tggaccacag atgtctccct   3240

gagccattat ttatttattt ttaaaaagca cagttattcc atcattttga gtctttgtat   3300

ttcgcttata ttgggggggca ggactatttt ctcaggtgtc tcatttggca gtcaacattg   3360

tcccctatgt tccctatgac tagttgaaaa ttcaagtgtg cccacagggg tgcacaaaac   3420

cacacccatg cacacacaca ccctcagccc ccacacacac cccgttgaac ccgtgggtct   3480

atcaggacat cctaaaactc cgtgattgac atttcagtaa tttcaggggga aggtgttttc   3540

cagggatggg gtctcccagg ttcagatagt gcctttggct gcaaatgctc ctttagctaa   3600

acttttcctc aggaagaatt cattattcta gacattatgt gatatatctg ttaggaataa   3660

aaggtgctta accttcctcc ctgggatgtg ggagaaggtg ctggaggttg tactgtgaag   3720

tcttcaggct cttagaaggc tccggcctga gagagccctt tattattgac attcctgtcc   3780

ttcctcaagg cctggtgacc tgtgaccttt cgctctgggc agggcccagg tagatgggcc   3840

gtcatccggg cctgtaagcc gtacttgatt tctgcattga tttacatatt ttttactgtg   3900

atcttggttc caaacacaga atcgtcaccc cattctccct tgaatgtgcc ggatccttgt   3960
```

aaattctcat ttacctactt gttcttagtg tgtatgtgtg tgcgaaactc tatgttcaag   4020

aaagaaatca tacaaagagt aagaacatgt ttgtgccatt gaagaaatgg tttttttgatt   4080

tctaataaat atttgttttg cctcgtt   4107

<210> 689

<211> 3872

<212> DNA

<213> Homo sapiens

<400> 689

agacatgagt ggacacctta ggggggctcgg ctgcggaaaa ggtgctgcag tccacaggga   60

acatggggggg attggacggg ttgcctgaag aagagaggaa agaatccctc accccagccc   120

ccaaaaggct gtgatgggat ggggaaaccc cataatcgct gtcttccgga cacctttttgc   180

cccttggctg cagttccact ggtcggcgcc cttctcagcc tggcttggaa ccgtcctcac   240

tcacctccac tcctcccagc agcgctcagg cacaacggtg tgtcctccct gtgacaacga   300

gttgaaatct gaggccatca ttgaacatct ctgtgccagc gagtttgcac tgaggatgaa   360

aataaaagaa gtgaaaaaag aaaatggcga caagaagatt gtccccaaga agaagaagcc   420

cctgaagttg gggcccatca agaagaagga cctgaagaag cttgtgctgt acctgaagaa   480

tggggctgac tgtccctgcc accagctgga caacctcagc caccacttcc tcatcatggg   540

ccgcaaggtg aagagccagt acttgctgac ggccatccac aagtgggaca agaaaaacaa   600

ggagttcaaa aacttcatga agaaaatgaa aaaccatgag tgccccacct ttcagtccgt   660

gtttaagtga ttctcccggg ggcagggtgg ggagggagcc tcgggtgggg tgggagcggg   720

ggggacagtg ccccgggaac ccggtgggtc acacacacgc actgcgcctg tcagtagtgg   780

acattgtaat ccagtcggct tgttcttgca gcattcccgc tcccttccct ccatagccac   840

gctccaaacc ccagggtagc catggccggg taaagcaagg gccatttaga ttaggaaggt   900

ttttaagatc cgcaatgtgg agcagcagcc actgcacagg aggaggtgac aaaccatttc   960

caacagcaac acagccacta aaacacaaaa aggggggattg ggcggaaagt gagagccagc   1020

agcaaaaact acattttgca acttgttggt gtggatctat tggctgatct atgcctttca   1080

actagaaaat tctaatgatt ggcaagtcac gttgttttca ggtccagagt agtttctttc 1140

tgtctgcttt aaatggaaac agactcatac cacacttaca attaaggtca agcccagaaa 1200

gtgataagtg cagggaggaa aagtgcaagt ccattatgta atagtgacag caaagggacc 1260

aggggagagg cattgccttc tctgcccaca gtctttccgt gtgattgtct ttgaatctga 1320

atcagccagt ctcagatgcc ccaaagtttc ggttcctatg agcccggggc atgatctgat 1380

ccccaagaca tgtggagggg cagcctgtgc ctgcctttgt gtcagaaaaa ggaaaccaca 1440

gtgagcctga gagagacggc gattttcggg ctgagaaggc agtagttttc aaaacacata 1500

gttaaaaaag aaacaaatga aaaaaatttt agaacagtcc agcaaattgc tagtcagggt 1560

gaattgtgaa attgggtgaa gagcttagga ttctaatctc atgttttttc cttttcacat 1620

ttttaaaaga acaatgacaa acaccactta tttttcaagg ttttaaaaca gtctacattg 1680

agcatttgaa aggcgtgcta gaacaaggtc tcctgatccg tccgaggctg cttcccagag 1740

gagcagctct ccccaggcat ttgccaaggg aggcggattt ccctggtagt gtagctgtgt 1800

ggctttcctt cctgaagagt ccgtggttgc cctagaacct aacacccccт agcaaaactc 1860

acagagcttt ccgttttttt ctttcctgta aagaaacatt tcctttgaac ttgattgcct 1920

atggatcaaa gaaattcaga acagcctgcc tgtccccccg cactttttac atatatttgt 1980

ttcatttctg ccgatggaaa gttgacatgg gtggggtgtc cccatccagc gagagagttt 2040

caaaagcaaa acatctctgc agtttttccc aagtgccctg agatacttcc caaagccctt 2100

atgtttaatc agcgatgtat ataagccagt tcacttagac aactttaccc ttcttgtcca 2160

atgtacagga agtagttcta aaaaaaatgc atattaattt cttcccccaa agccggattc 2220

ttaattctct gcaacacttt gaggacattt atgattgtcc ctctgggcca atgcttatac 2280

ccagtgagga tgctgcagtg aggctgtaaa gtggccccct gcggccctag cctgacccgg 2340

aggaaaggat ggtagattct gttaactctt gaagactcca gtatgaaaat cagcatgccc 2400

gcctagttac ctaccggaga gttatcctga taaattaacc tctcacagtt agtgatcctg 2460

tccttttaac accttttttg tggggttctc tctgaccttt catcgtaaag tgctggggac 2520

cttaagtgat ctgcctgtaa ttttggatga ttaaaaaatg tgtatatata ttagctaatt 2580

agaaatattc tacttctctg ttgtcaaact gaaattcaga gcaagttcct gagtgcgtgg 2640

atctgggtct tagttctggt tgattcactc aagagttcag tgctcatacg tatctgctca 2700

ttttgacaaa gtgcctcatg caaccgggcc ctctctctgc ggcagagtcc ttagtggagg 2760

ggtttacctg gaacattagt agttaccaca gaatacggaa gagcaggtga ctgtgctgtg 2820

```
cagctctcta aatgggaatt ctcaggtagg aagcaacagc ttcagaaaga gctcaaaata  2880

aattggaaat gtgaatcgca gctgtgggtt ttaccaccgt ctgtctcaga gtcccaggac  2940

cttgagtgtc attagttact ttattgaagg ttttagaccc atagcagctt tgtctctgtc  3000

acatcagcaa tttcagaacc aaaagggagg ctctctgtag gcacagagct gcactatcac  3060

gagcctttgt ttttctccac aaagtatcta acaaaaccaa tgtgcagact gattggcctg  3120

gtcattggtc tccgagagag gaggtttgcc tgtgatttcc taattatcgc tagggccaag  3180

gtgggatttg taaagcttta cagtaatcat tctggataga gtcctgggag gtccttggca  3240

gaactcagtt aaatctttga agaatatttg tagttatctt agaagatagc atgggaggtg  3300

aggattccaa aaacatttta tttttaaaat atcctgtgta acacttggct cttggtacct  3360

gtgggttagc atcaagttct ccccagggta gaattcaatc agagctccag tttgcatttg  3420

gatgtgtaaa ttacagtaat cccatttccc aaacctaaaa tctgtttttc tcatcagact  3480

ctgagtaact ggttgctgtg tcataacttc atagatgcag gaggctcagg tgatctgttt  3540

gaggagagca ccctaggcag cctgcaggga ataacatact ggccgttctg acctgttgcc  3600

agcagataca caggacatgg atgaaattcc cgtttcctct agtttcttcc tgtagtactc  3660

ctcttttaga tcctaagtct cttacaaaag ctttgaatac tgtgaaaatg ttttacattc  3720

catttcattt gtgttgtttt tttaactgca ttttaccaga tgttttgatg ttatcgctta  3780

tgttaatagt aattcccgta tgtgttcatt ttattttcat gctttttcag ccatgtatca  3840

atattcactt gactaaaatc actcaattaa tc                                3872
```

<210> 690

<211> 4030

<212> DNA

<213> Homo sapiens

<400> 690

```
aaatacattt tcaaaattat ctattactag gtccactggt ctccacataa tgaaactatt   60

ctggcttcaa gtggtactga ccgccgcctg aatgtgtggg atttaagtaa aattgggggaa  120

gaacaatcag cagaagatgc agaagatggg cctccagaac tcctggtacg cattggctta  180
```

```
tagaagatga aatgtcatat gcagattgga ttgtcattga tctctttatt tcgagaatgg    240

gtcagaactt cgaattctag ctcttgcaga tggtttcaaa atggaggccc tgaaggttat    300

tgcaactggg ctttgacatt tatcaaaaat agtaaatgga gcccagtagg tttttatgaa    360

tgtttcactg agaatggttt gaggtcctgg aaaatagtat atagtaattt ctcactgatt    420

tcaactctgg tatttgtgat ggtttgggga tggggagtga gtataattgc tattcagttg    480

gcagtactta acatttccta acagtataga aaaaatttta aatgcttttt aagtttcctg    540

cccagaaaag gagtgctttc tcaatcttga tgttagcaga gcccactatc tccctcccat    600

gcctgattga agcatcacgc atctccttgg ccctttgaaa gcttatgtgg tggtatctgc    660

ccatcctcat tcttcccgtc tgagtccttc agtgctcact tcgtcatttt tctatgaagc    720

attgccggat ttagcaatgg ttccctgtcc ttgctctgaa tccaacattt gtctcctccc    780

attatttggc agatagtcac tcatcactct gtcatttacg attttagttc taatgccagt    840

actcattttt ggcacacttg tactttgtcc atgagtttta tttattcatt ttttctgtga    900

acctatggag tatattgaat gtccacaagt tttcaaaggt aaagaaggtc cttgagagca    960

agccctgcac acagaagatg ttcactaagc ccaccttgta agaatgctcc agaccctttt   1020

attttgatga cggctttact gagatataat ttacatacca cacagttcac ttctttaaag   1080

tgtacagttc agtggggagg gagtgttctt gggttttggg ggttttttttt cttttttttgt   1140

tcttgaagtc agtggttttt agtatattca tagacttgta aaactatcac cacaaatcaa   1200

ttctagaaca ttattcatcc cctccaaaag aaactatagc tatcacctcc caattctctt   1260

cttcctccag cccttggcaa ctactgtgct actttctggc actataagat tgggctattc   1320

tagatatttc atataaatat gacttttgtc ttttgggact gattctttca catagtacaa   1380

tgttttcaag gtctccagct attttttttta gggagagagg aaagcgtatt actttgtata   1440

ttatgcctct gcaacaattc caaggtcctt gagaaaatac actaggattt tgcttttttac   1500

aagagagctt gaaatcaagg gacatttgag agtagtaaac tgggcctggg catggtggct   1560

cctgcctggg atcccagcac tttgggaggc caaggcaggt ggatcacgtg agcccacagg   1620

ttcaagacca ggctgggaaa catggcaaaa ccctgtcctg tctctaccaa aaaaaaaaaa   1680

aaatgcatag attggccggg tgtggtggcg cgtgcctgtg gtcccagcta cttgggaggc   1740

tgaggtagga gaatcgcctg ggcccgggaa gttgaggctg cagtgagcca tcatcacacc   1800

actgcactcc agcctgggca atgggagtga gaccctgtcc caaaaacaaa gtagtaaact   1860

attccaccag tatgctttga taactcctgt atgttttcta agccccagtg atcttaaaat   1920
```

```
atattcacct gtgtacccct taagagtact ctctctgtcg cccaggctgg agtgcagtgg  1980

tgcaatctca gctcactgca gcctctgcct cccgggttca ggtgattctc ctgcctcagc  2040

ctcccgagtg gctgggactg caggtgcgca acaccatgtc cggctaattt ttgtattttt  2100

ggtagagaca gggtttcgcc atgttggcca ggatggtctt gatctcttga cctcgtgatc  2160

cgcccgcctc agcctcccaa agtggtggga ttacaggcgt gagccaccac acccggccag  2220

tatattcact tgtgtacccc ttaagagtac tttaaaaagc tatttacctc tttttttttt  2280

aagtcaaggt ctggttctgt cacccaggct ggagtgcagt ggcgcagtct tagttcactg  2340

caacctccac ctcccaggtt caagctgtct tcccatctca gcctcctgag tagctgggac  2400

tatgggcaca ccccaccacg cccggctaat tttcgtattt tttgtagaga cggggttttg  2460

tcatgttgcc caggctggtc ttgaactcct gagctcgagc catccgcctg ctttggcctc  2520

ccaaagtgct gggattacag gcgtgagttt tacccagccc cacctcatat ttttaacccg  2580

ataagattat tcggtaaaat agatacattg cataatacct agttggcagg cagagacctc  2640

attgtcaaac tagagtcaaa tcagactttg tcagaaagtg tgatgtccca gttccaaaca  2700

gtgtatttag tactgtcctt gtgaagaagt gtttcgttta aatcttaatt ctaagataaa  2760

aaaataaggc atagtgcatt ccgacgaggt tgtctcttgc ggggaacaac tgctctcttc  2820

agaattgttt agcaaagctc tcaccttagg catagcttat gagggactat ctggagctat  2880

gcttttggag ccagggattt tctttcaccc tggtgctgtc tgtgtacgtt ggaagatggg  2940

caagaagtat gcctctctca gtaaagtgga gaggggaaga accagaagac tcctcaggcc  3000

ccttgtataa tagaagagta tgttacatgg catataacgg attgattacc ttagatgttt  3060

gcacctaact gtatatgagc aaatgatgct ggattaatgt tcatcataat cagtatggaa  3120

atggcatttt gactaggaaa atgtcctcat tcttaaggga tgcaggctga agtcttcagc  3180

catttcattg tataggctca tggataaagc atcagttatg ctagtattac ttggtgaatc  3240

taggtaaagg gtatacaggt atccattgta ctatattctg tcacctattc tggaggtttg  3300

gaaatttgca aaataagtat aaatagatta ctgagcctgt accaccttct aaaaccagac  3360

agcacccacc cccagttgga atactgatag ctctaaaaac ttagtaaaac ctttgttagg  3420

attaacagga gagtatatga aatcaaagct tttttgttc ttgtaacagt ttattcatgg  3480

aggacacact gctaagattt cagattttag ctggaacccc aatgagcctt gggtcatttg  3540

ctcagtgtct gaggataaca tcatgcagat atggcaaatg gctgaaaata tttacaatga  3600

tgaagagtca gatgtcacga catccgaact ggagggacaa ggatcttaaa cccaaagtac  3660
```

```
gagaaatgtt tctgttgaat gtaatgctac atgaatgctt gatttatcaa gcgccaaaaa    3720

ggcattgtat agtaggaaat gtaagtgggg tggcttatgg cttctttatc ctctgattct    3780

agcactttca agtgagctgt tgcgtactgt atcatattgt agctattagg gaagagaaga    3840

atgttgctta agaaagaaca tcaccattga ttttaaatac aagtagcagg gtattgcctt    3900

tgattcaact gttttaagtc ctcattttct caaactaagt gcttgctgtt cccaaatatg    3960

caagaataac ttttacactt tttccttcca acacttcttg attggctttg cagaaataaa    4020

gttttaaaat                                                           4030
```

<210> 691

<211> 4370

<212> DNA

<213> Homo sapiens

<400> 691

```
tttggtttag gcacagcctc ttttttgccat ctggaatcaa agagcttgtg ctgacgtgct     60

tgaccgcgaa cttggccctg ccaccaccca ctccaggacc tcctggcctg acttgcgcac    120

atgcacacag ggtgtcggga ggtgggatca tggcaggagt agttttgact tgggactgca    180

gaccttctcc actggcattt aagaagtgtg ctgtactcgc gaggaataat ggcagtgtgg    240

ctgcttgggt gccctgtgtg ggtgccggcc cagaccttgc ttagcggtcc cctcctggtg    300

gagacctgct gctgcagact cagtccctgc ctttgacgat gcccgacctt ccccgctcat    360

ggcagtggag ggtgagggg tcttggcaac agtggagata cgtgtgctgt ctaaggaggg    420

acaagaagct gctcacaagc ctcgtgccca tcccaacact cagcgtggcc tcctcacagg    480

tcttgttccg agcgagtggt ggcaagccca tcgccgtgct ctgcctgact gtggagctgc    540

agccccacgt ggtggaccag gtcttccgct tctatcaccc ggagctctcc ttcctgaaga    600

aggccatccg cctgccgccc tggcacacat tccaggtgc tccggtggga atgcttggtg    660

aggaccccc agtccatgtt cgctgcagcg acccgaacgt catctgtgag acccagaatg    720

tgggccccgg ggaaccacgg gacatatttc tgaaggtggc cagtggtcca agcccggaga    780

tcaaagactt ctttgtcatc atttactcgt aagtgcacag gctttgggga cctggaggcg    840
```

```
gtggcggagg agaggaggag gcaggcctgg ggctgctggt ggattgaaag tgggcttggc    900

cccttcctaa aattgggggga gctttcgggc cttcgctttg tgaggcggga ttctgctgcg    960

agttcagggc ccgcaggggt ctagggaagg caccttggag gggcacgtgc agcctgaggg   1020

acttgggatg cagctcctgc caccaaggag agacaccagt cagcctctgt ccccagatag   1080

tggcaagggc cacccagaag cccctcatta ccttttctt gctgagtccc taggctgaac   1140

agcatgaatg aagctgtggt ccctcctgcg gagaggcagg actgtggtgg aaatgcccat   1200

ccctctctcc tccaggctaa atgacccggc ccctttcccc tccctcctta agtcggatcc   1260

ccaagccctg tgagaatcct ttcaaactgg tgtgagctcg gagatttcct gcagtgcttc   1320

tgaggatggg gcaggggcta acctgcactc agtgcccacc acagaggggc cacgtgacca   1380

cgtctcagag tggcttcctc gtgagcccat gaagatgcct cacccagccc catttgactg   1440

tgaagcagca ggctcttggc cctaaaatgc taacaggggc ttccgtgctc aggccggcat   1500

gacctccagc cccaccctgt ctcctgcgtg gcgctgccct tggcttagcc tcagaacccc   1560

tattggggggt ggacacttgt ccaggatgtg tgtttggcca aagcgtgcct tgtcatttgt   1620

ttgacatgtg gttcctaagc agccctgctg cgccctgaga gcctctgctg tgggtgggag   1680

atgggcagcc aggggtggag ccaccaggcc ctagctctgc ctcctggggc ctggtcctcc   1740

ggggctttcc ctgcgtggcc ccagctctgc ctcctgtggc ctggtcctct ggggctttcc   1800

ctgcacagcc tcctgtctgc ccacgctcct ggcagccctt gttggcctct cgtgggccgg   1860

tgctgagtcc tccgggacaa gtgcagatgg ctcccatccc actgcaggga tcgctggctg   1920

gcgacaccca cacagacgtg gcaggtctac ctccactccc tgcagcgcgt ggatgtctcc   1980

tgcgtcgcag gccagctgac ccgcctgtcc cttgtccttc gggggacaca gacagtgagg   2040

aaagtgagag ctttcacctc tcatccccag gagctgaagg tacggcctct ctggggggctg   2100

ttctgagcct ctccccaacc ccagcctgga gacgggcagt gggcattcag ctggagcaca   2160

gtgggtggcc ctgacagcag cttttccagc gcctccagcg cgcagacgct gttaccagag   2220

gcctctcggc agttgccttt cgttagatgt gccattgtgg ggtgagtgac gtacacacca   2280

accccaaagg ccggtgttca gaattcctgg caaggtgaac agtgacagga gctctggtgt   2340

tagtgaagcc acagttagat ggggtgggag ggcggcccct ggtgccacca gctggccggg   2400

gttttaagcc caagatggct tcagttctgt ctgcggaggc agcgcttagg gaatagtcgc   2460

cgtgtgagag gagggacttg cctggtgtgg acccaagtcg cggccacagt catgtcaggg   2520

ttggttgtgg cctcagattt ggccgcccccg gaaccaccca tgaccttggg ctcccctggc   2580
```

tgattggggct gcaggcgccc aggagccccct tgcttgcaca tcctgagagg ctgtgctctg 2640

acccgcctct ctcgctcttg aagacagacc ccaaaggtgt cttcgtgctg ccgcctcgtg 2700

gggtgcagga cctgcatgtt ggcgtgaggc cccttagggc cggcagccgc tttgtccatc 2760

tcaacctggt ggacgtggat tgccaccagc tggtggcctc ctggctcgtg tgcctctgct 2820

gccgccagcc gctcatctcc aaggtctgta tgtgtggcag gcacaggctg aggggatggg 2880

ggctcaatac cagggcactg caggacccccc acctcggccc tgtgactcgg accactggat 2940

acagtgttct gacccagcag ggccgggtgc atgagtgttt gctcctgtgc tgtgtctctc 3000

ccggatggaa gctccagaga gcgtctgtct tatctctgtg ggggtccccg tgcacggtgc 3060

acaggagact cagggaatac ttggaggaag ggccagtggc tgttcccgtg agtggccgca 3120

gcgtctccct gtcccctccc tccacaggcc tttgagatca tgttggctgc gggcgaaggg 3180

aagggtgtca acaagaggat cacctacacc aacccctacc cctcccggag gacattccac 3240

ctgcacagcg accacccgga gctgctgcgg ttcagagagg actccttcca ggtgtggtgg 3300

ggctgtgcct gggactccta ggggaagacc cggggacctg aatggagggc agttagcctg 3360

catttaggag cgagttcctc aaatcaccag cagtcttcca aaagccccag ggcggtgaca 3420

ggtaccatcc catagttggg tgggcccgtt gtctctttag tagctggaga tttagcaaag 3480

tttctcctga gtgtgggaaa gggtgttgtg cccagggctt ttcatggtaa tgttagacag 3540

ctcagtctcg gaaataagtg tgccttcgag tccaagtaac gcgtcacact ggctgagcac 3600

tggttcccat ccttgtaccg ggcgctgaag tcaaaggcag gccttggatg cacccgcagg 3660

gctcccctgc cttgtcagct cccccttggaa ataaacacga ccatgcagag aggttgctgg 3720

tgagagcgtg ggacagcccg ggggtggatg ctgggatttg gatgcttatt tccaggtcgg 3780

gggtggagag acctacacca tcggcttgca gtttgcgcct agtcagagag tgggtgagga 3840

ggagatcctg atctacatca atgaccatga ggacaaaaac gaagaggcat tttgcgtgaa 3900

ggtcatctac cagtgagggc ttgagggtga cgtccttcct gcggcaccca gctggggcct 3960

gtctgtgccc ctcctgccct gcaggctgtc ctccccgcct ctctgcagcc tttcacttca 4020

gtgcccacct ggctgacctg tgcacttggc tgaggaagca gagaccgagc gctggtcatt 4080

ttgtagtacc tgcatccagc ttagctgctg ctgacaccca gcaggcctgg gttccgtgag 4140

cgcgaactcc gtggtggtgg gtctggctct ggtgctgcca tctacgcatg tgggaccctc 4200

gttatcgctg ttgctcaaaa tgtattttat gaatcatcct aaatgagaaa attatgtttt 4260

tcttactgga ttttgtacaa acataatcta ttatttgcta tgcaatattt tatgctggta 4320

ttatatctgt tttttaaatt gttgaacaaa atactaaact tttacacgtc   4370

<210> 692

<211> 815

<212> DNA

<213> Homo sapiens

<400> 692

tacacacatc acaggttacg tccttcaaca ttgtgtacag gcacatacac acatccatgc   60

actcacacac acatgcacat gcacgcgcac acacatcaca ggttatctcc ttcaacattg   120

tgtacaggca cacacacaca tccatgcaca cacacacatc catgcactca tacgcacgca   180

cgtgcgcgcg tgcacacaca cacatcacag gttacctcct tcaacattgt gtacaggcac   240

acacacatcc atgcactcac acacacatgc acgcacgtgt gcacacacac acaccacagg   300

ttacctcctt caacattgtg tacaggtgca cacacacatc catgcactca cacacacatg   360

cacgcacgtg cgcgcgcaca cacacatatc acaggttacc tccttcaaca ttgtgtacag   420

gcgcacacac acatccatgc actcacacac acacatgcac atacacgtgc acgcgcgtgc   480

gcgcacacac acacacacat cacaggttac ctccttcaac attgtgtaga gcacaggcca   540

gcaagctttt cctgcaaaga gccggagagt gaacatttta ggctttgtgg gccagacaat   600

ctctgttgca aggattcagc tctgccatag acaatacata aatgcacaga tgtggccacg   660

ctccagtaaa agcgtattca caaagtcaga cggcggggcc aggcgtgggg gctcacgcct   720

gtaattccag cactctggag gccaaggtgg gaggatctct tgagcccagt agttcaagac   780

cagcctgggc acacataaca agacctcatc tctac   815

<210> 693

<211> 5123

<212> DNA

<213> Homo sapiens

<400> 693

```
agtgggggcc tgatagcgcg gcggtgtgga ccgcgcggcc gaagagcgcg gcgcccagag    60
cgcgggccgc tcgcggagcc acagcccgag ccgggtccca gccggagccg agccccagcc   120
gagccgagcc gggcccggag cgcccggtgc ccgcagccat gccggccggc cgcgccgcgc   180
gcacctgtgc gctgctcgcc ctctgcctcc tgggcgccgg ggcccaggat ttcgggccga   240
cgcgcttcat ctgcacctcg gtgcccgtgg acgccgacat gtgcgccgcg tccgtggccg   300
ccggcggcgc cgaggagctc cggagcagcg tgctgcagct ccgcgagacg gtgctgcagc   360
agaaggagac catcctgagc cagaaggaga ccatccgcga gctgaccgcc aagctgggcc   420
gctgcgagag ccagagcacg ctggaccccg gagccggcga ggcccgggcg ggcggcggcc   480
gcaagcagcc cggctcgggc aagaacacca tgggcgacct gtcccggaca ccggccgccg   540
agacgctcag ccaactcggg caaactttgc aatcgctcaa aacccgcctg gagaacctcg   600
agcagtacag ccgcctcaat tcctccagcc agaccaacag cctcaaggat ctgctgcaga   660
gcaagatcga tgagctggag aggcaggtgc tgtcccgggt gaacaccctg gaggagggca   720
agggggggccc caggaacgac accgaggaga gggtcaagat cgagaccgcc ctgacctccc   780
tgcaccagcg gatcagcgag ctcgagaaag gtcagaaaga caaccgccct ggagacaagt   840
tccagctcac attcccactg cggaccaact atatgtatgc caaggtgaag aagagcctgc   900
cagagatgta cgccttcact gtctgcatgt ggctcaagtc cagcgccacg ccaggtgtgg   960
gcacgccctt ctcctacgct gtgcccggcc aggccaacga gctggtcctc attgagtggg  1020
gcaacaaccc catggagatc ctcatcaatg acaaggtggc caagctgcct tttgtcatca  1080
atgatggcaa gtggcaccac atctgtgtca cctggaccac ccgggacggg gtctgggagg  1140
cctaccagga tggcacgcag ggtggcagtg gcgagaactt ggcgccctat cacccatca  1200
agccccaggg cgtgctggtg ctgggccagg agcaggacac tctgggtggt gggtttgatg  1260
ccacccaggc atttgtgggt gagctggccc acttcaacat ctgggaccgc aagctgaccc  1320
ccggggaggt gtacaacctg gccacctgca gcaccaaggc tctgtccggc aatgtcatcg  1380
cctgggctga tcccacatc gagatctacg gcggggccac caagtggacc ttcgaggcct  1440
gtcgccagat caactgagca cggcaggcca ggctgagccc gcccgccctc gcccctgct  1500
tgtgcggcga tgatctgttt tgtgcgtctc ttctctccct tttccccagg aatgaaccga  1560
ggccgtcgcc cctgcacacg cacacgcaca cagcctggtt ttgtcctcat gcacacgaag  1620
```

cagcccctgc tcccatctgt ccctgaggaa gccccacttc tctgtaggag cccggactct 1680

ctcaggcatg ccccattcac agctgaagtg ggtgctgcaa cgtcttgaac aaggcagaag 1740

ttggtgagag gatctgtgtg tgcgtgtcta catgtgtgtg tctacgtgtg tgcgtgcgtg 1800

gctggggggag gccttttctt tgaggacgta cctcatttcc ttctttcttc tggctttgga 1860

aaaatctcat gatgaaaatt catatttgcc aactttgtta gctgcgtgcg tgctttgggg 1920

ttggtgcaac ctcagtacac gcatttgtct ttgtttgcaa acctttctca gagcgacata 1980

tctttatatt gatgtaataa atgtctttta gtggtttgtc aaaggccggg ggcgggggct 2040

ctctacagag aatttttatt ttgtaataga agtgaactgt ctctgaaggg tgaaggcagg 2100

ccgtcctggg atggtaccct gtgctctccc gtggaggaga ggggatggct gaggacactg 2160

gcccttaccc cagggccaga cagcatccat ccctgctgtt tgcatctgag agcagcatgg 2220

ggcctgggag gtcggcctgt gtgcccagct cagctagctc tgccccagga cggccctgcc 2280

ctcgaccttc ccacctcctc agatcctgca aggctggggt ctgcccctcc cttctcacct 2340

ctggagctgt gctgcactgc ttcagcccag agggccctga gagaggagcg tgccacccac 2400

agcccgggaa gccgggcccc agcacccctc tcctttggcc tccggcagtg cagaccagag 2460

gggacctttt aaggaaagaa gccgtgtttc gatgaagacc tggccacatg gggccactgg 2520

gacttcaacc cagcccatcg gtgggaaggt cctttttggg ggcctttgac agccatatcc 2580

ctcccagcac accaggcgcc aggtgagctg gttcagaccc ctccaggggt actccagaga 2640

cctcacgtgt ggagccaggc ctggccaggg caggggcctg aaacccactc ctccatctca 2700

tggggctcac ggcctacagc agcccacaag ctgccactgg ccggcgacac tgacacctga 2760

gcagtgtcca gaaccttttt gccttttttt gttccccgtg aaaagcaaca tggacatttc 2820

cttctagtcc ttccaaggag gggagagaag tgtatgtgca tttgtgtgtg tgtgtgtgtg 2880

ttgtgtgtgt gtgtgcgcta agtgagaaag agagcaggct cgggaggccc tgcccagggt 2940

aggaggagct tcctgctttg caccatctgg tggtcgcacg ccctgagggc accccgactc 3000

tgtctccagg agtctcatca gcaaaccgct gacaagtctt tctagaaatt ctactgcact 3060

gcctggctca gctgcagctg cagacatttc tgcaggagga gcaggtgttt ctgtcttctg 3120

ttccttctag ggccacctgt cccccttaaac acaggtccac gttgtgtcaa gaacctagtg 3180

catctgtgtg tgtctgtcag tgtctctgtg tcagtgttct tgtgggtgtc tgcacggtac 3240

ccggccgccg ttctgcaatg catcactccc gcagaggggg gtgcagatca ggcgccgtgc 3300

tgcgcgttgt tgttcaacag tggctttttc ttagataatc gtgcttcctc agcgcccgtc 3360

gggttgtggc atccttggat ctgcagggat cttctccgtt tgcatgttcc tcggggtggc 3420

gtgttccttg ctccctgggt ccgacatgtg ttcccgcacc tgcatggact gccccggttc 3480

tgtgttgtgt gccgagtgcc gcccagtgtt ctgtgaccac ccgtgtagct actgaaaatg 3540

gctgggtaag caagtcaagg gtgttggagg aggtcaagag agagctcagt ttccctctcc 3600

ccctccccaa acacaccaag aagcattttt aacgtgtagg ttgagaacaa gcctaaagga 3660

ttcccacagc tgggagccag caagagagct tggagtcgcc tctctagacc agatctagcc 3720

ccaccctcac tccagccatc tcggagccct tgtgtaggca acgcccggtg cgggctgtgt 3780

ggggtgctcc cctgccagca cctccggcca gccccgcccc tgccgatcta ctggaccgca 3840

gaccaccttc tcccccgtg ggccaggtgg gagctgtccg ttcaggacca tgagccatcc 3900

tctgccctga ctagcgaggg gcagagcaca ccccagtgct tacgcctcca cccctgcagc 3960

ctcctggccc gctcaccttc ctcacccctc ctctgaccca cccatggtgc cagggccgaa 4020

gctgaccttt agctccctcc tgccccttgc tagggtctga gccaagcccc tcgactccct 4080

cactgtgttg acacttggca ctttgctggc cccgagaaag gtcgatgaca cagccgcaaa 4140

tctaatccac gtagttccca tttactcctt aatctgattg atgttccctc ttgcactgaa 4200

taatacatgc ctctctcagg taagccattt tataaaacaa gaagataaaa agcactgttg 4260

aggcagtgtt tgcttttgcc gagctggtgt ccgacagctc cctgggtgtc cggggtggga 4320

gagctgttga cagaagctct ccgggccctc aggggcttag atcccacttg agtcgtaagc 4380

cttcttgctt ttgataacac agtattattt ctcttactgt agaagaaaaa gtttattacc 4440

aaacaagagt attttatga aagaaaagga caaacctata aattaactca acctatatct 4500

cccttgaaaa tactttcagg ctccaccaaa acgtagaact gaaagcatgt attttggaag 4560

aaagagatac attttgtatg ctttcttttc cttttgtaga ttcccagttt attttctaag 4620

actgcaaaga tcactttgtc accagccctg ggacctgaga ccaagggggt gtcttgtggg 4680

cagtgagggg gtgaggagag gctggcatga ggttcagtca ttccagtgag ctccaaagag 4740

gggccacctg ttctcaaaag catgttgggg accaggaggt aaaactggcc atttatggtg 4800

aacctgtgtc ttggagctga cttactaagt ggaatgagcc gaggatttga atatcagttc 4860

taaccttgat agaagaacct tgggttacat gtggttcaca ttaagaggat agaatccttt 4920

ggaatcttat ggcaaccaaa tgtggcttga cgaagtcgtg gtttcatctc ttaaacacag 4980

tgtgtaaatt tattcaacta acgatgggaa atgtattact tccgtacaca gtggactgaa 5040

gtgcaatttg ttgaaaggga acaagtcatt gaagagaaaa aaaaaagccc aatacttaga 5100

gtcccaattt tgtctcattt gcc   5123

<210> 694

<211> 3692

<212> DNA

<213> Homo sapiens

<400> 694

tggtagccct ggcatacgaa gcccttctac agaggggaag gggtagaatg ggatggggtg   60

gcagcagcca ggtctagggg ttggccaaag gctcctttcc cttggggagg cccaggagat   120

gggcttgggg cttgttaaag agacagcccc tttcccctgc acaaatgggg caggtgcaat   180

agtcttggag ttggtagtat tgggtgccca gctggtggaa cagtggcctc aaggattgtc   240

ctgggtcctg gaggtcagga ttcgggcaag aagattgtat gaggcccatt tgcttggtgg   300

agaaggtggt ccagacaggc ggcattcctg gggtcagtgg actcccactg gaagcccta   360

gtggcctggg taccttgccc tggtcttaga daccctgag cactgagcag aagagcagag   420

gagcattttg cacaatggag aagccagaag aaagagggtg cccagatgg ctgggagagc   480

tgagaagccc ttcccacagg caaagacaga gcccccagcc ccctggttgg ggccagggca   540

ctgagtctgt caccaactgg gcactggaga gatgaaacca aaggtgggca gggggttggcg   600

acagcactgg ggactatccc tgtgggtcct aggtctgtga gcccctccc caatgcctgt   660

gtcgcgtaca gttttatgta ccaataggcg acatttggcc agaggagagc cccccctcaaa   720

cccagcctga cccagtctgt gtcttcccag aggggaccta gtcggtcccc atccccctac   780

ttcagggcat gtctctccgt aggggaggg tatatgggga catatttctc tcctagggtc   840

cttgaagcat gtttcacatt ccggggtggg gggaagttct ctgggcatcc ctcacctctg   900

gggtctctct aggccctatc tctccccttg ggagtctccg ggggacatgt gttcccgctg   960

aggaccacgg gagcatgtct cccccaatta cccaggctct ctggggagcc tgttttcctc   1020

ccagggttcc tgggagtact taaggcaagt cagtttcggg ccatctctct tcccagggaa   1080

gggggctatc tctgaaacac gtctgggaag ggatgtttct ggccttaccc ccatctctcc   1140

tatgggggtt tctctgccct gcagcacttt aggatgaggc tgggcatctc tgagttgtct   1200

```
tttctcctag gagccctggg atacctctct ctcccgaggg tagggcctct ggagccattt  1260

cttccctggg tcggggctgt ctccgggtgt tgggagggct tgtgttggcc atgagaaagt  1320

ctcttaaggg gcgtctccac tggggacttc tctgggaggg gggactgtgt cccgcccatg  1380

gggtttcggg cgggtgtgtc tcccccttc cgggctcgac cggcccggc ctcctccgtc  1440

cggctcccgg gtaaacaccc gctccggaga ggtcggaaaa cagagaccgg atcagccggt  1500

tcctggcccc gcctcccggg gcgttgctcc ctcctccgcc cctccccacc cccacacccg  1560

cccagcgtcg cgcgcttttg ctctacccgc gccctagctc cctaggccgg tactgtgtgg  1620

gcctcgctcc ggaccccggg gtcggtccag ccgctgggat tggccgaccg cagggactaa  1680

tcccggatga gcctcgtgta aacccggatc gacagcgggg acggcggggg ttgctggcac  1740

cccttcatcc gttcccagac gcggagcatc acggggcata gagcccaccc cgaggctcct  1800

tgctgctttc ggagagaccc gagttggatc tgcagttggg ggcgtggcgg ggcaggagat  1860

gaagaacgca gggccgggat ctgacgcgcc gagagcctgg cgcggggtga ctggggtgtg  1920

gggcggaaag gcagagatct ctcgggcagt acttgaatct accggcttag gtcagctccc  1980

tactcagtct acaaccgaag cccctacct atcctccagt tacagaatca cagaccctcc  2040

ccctaccagt gggtgtggca acccttccta aacctgaggc ctcacctcat taggagaggc  2100

gctgaatcag cggggggaggg gcccgcattg tctccacccc tgacttgacc ccacagtgaa  2160

gggtgaggag ttccttctgt taaggcctag cccaggaaaa gatgtctgga gttaaggaag  2220

ttggaggaga tgtggtggcc gactgggtac cagaatcctg tcactggttg attaactcat  2280

tctacaaaca tttcctgagc ccctcccatg tgccagaccg gcacagggta ctggacccca  2340

agaatgacac acagtctctg tgggaaaggc agacaggtaa acaatgacca catcttgtgt  2400

tcggccctgc cttgagccgg aaattctggc aggagaccta aaggcgctgt cctctccaaa  2460

gtctagaggc tttctggaag gggtggtgcc agagctgagt ttcaaagggc aaatgaggga  2520

taggctactg aggaaggggt cagccttgca ggctgaggag gagtatgtgc cagggtctgg  2580

aggtggagga ggaggtgagg tggctcagga gggcaggaga agttggagaa gaaggcaggg  2640

gccagaacta aggacctgct ggtcaactta aagtgcttgg attgaggggt tggagaggag  2700

ccatttacag attttaagcc tgtaaaagaa aaggtcagat ttacattctt ccagattctg  2760

tgttcctccc ttccctgccc caggtttctc tggggatgcc tgggttggga gtggagatac  2820

acaggcagac aggaagagga accaggtgca gtttaggctg gttaagaatg gtccctggct  2880

ggtcgcggtg gctcacacct gtaatcccag cactttggga ggccgaggtg ggctgatcac  2940
```

gaggtcagga gttcgaaacc agcctggcca acatggggaa accccatctc tactaaaaat 3000

atcaaaatta gctgggcacg gtggtgcgca cctgtaatcc cagctacttg ggaggctgag 3060

gcaggagaat catttgaacc cgggaggcag aggttgcagt gagccgagat tgtgccactg 3120

cactctagcc tggacagcag agcaagactc catctcggaa gacaaacaaa agaatggtcc 3180

ccactttcca tcaaacttgg agtcagagag acctacgtta gaaatttggc tgtacttatt 3240

tctagtggca tgaccttggg taggtggctg agcctcagtt cttcctctg taaggtgggg 3300

ataatagtgc ttaccatcac caaaggttat tgtggggctt caatgagata atttgtccac 3360

ttttttattt atcacacgtc taacacctac taagtggcag gcactgtctc aggtgctagc 3420

attatggtgc tgaataagac aggcatgatg cctactctct ctctctggga acttgcattc 3480

tagaggaaaa gacagacaat aaacaaataa atgagataat tatagattgt gttaaagtgc 3540

tgtgaaggaa acaaacagtg ggacaagaag ggggataact ggaggtgggg gaggggaggg 3600

ggctgcttta cccagccagg gaagcttccc tgaggaaacc tgaaggttgg ccagtgtact 3660

ccagcctggg caacaaggtg agaccctgtc tc 3692

<210> 695

<211> 3910

<212> DNA

<213> Homo sapiens

<400> 695

ctttttctt tttctttttt tttttttttt tcttcgagac tgagtcttgc tctgtcgcca 60

ggttggggtg caatggcgtg atctcggctt actgtagcct ctgcctcccg ggttgaagtg 120

attctcatgt ctcggcctcc taagtatctg ggattgtagg cacccgctac catgcccagc 180

tagtttttgt attttagta gaggcggggt ttcacagtgt ttgtcaggct ggtctcaaac 240

tgctgacctt aagtgagctg cctgcctcgg cctcccaaag tgctgggatt acagatgtga 300

gccactgcac ctggcctact tatgctttt tctattgtga acttatagaa tatattataa 360

atgttttttt tttttttaat aagatgaaat cttgctctgt tgccaggctg ttgtgcagtg 420

gcgcgatctt ggctcactat aatctccgct tcctgggttc aagtgattcc cctgcctcag 480

```
cctcccaagt agctgggagc caccaaaccc agctaatttt ttgtatttta gtggagatga    540

ggtttcgcca tgttggccag gatggtcttg atctcctgac ctcgtgatcc gcccgcctcg    600

gcctcccaaa gtgctgggat tacaagtgtg agccaccgtg cccggcgaaa tgtttttgtt    660

tatttattta tttaattttt gttttttaaga ccgagtcttg ctctttcacc caggctgggg    720

tacagtggca tgatcgtagc tcactgtagc ctcaaactcc tggtcttaag tgatcctccc    780

acctcagcct cctgagtagt tgggactaga ggtgtgccac catgcctggc agggatacat    840

tataatttt ttttttttt taaatggagt ctcgctctgt cccccaggct ggagtgtagt    900

ggcgtgctct cggctcactg caacctctgc ctcccgggtt caagcgattt acctttttt    960

attttcttt tttgagatgg agttttgctc ttgtcgccca ggctggaagt ggcgcgatct   1020

tgggtcagtg cggcctccgc ctcctgggtt caggtgactc tcctgcctcg gcctcccgag   1080

tggctggaat cgcaggcatg tgccaccatg cctgccgaat ttttgtattt ttagtggaga   1140

cgggggttta ccatgttggc caggacggtc tcaaactcct gacctagggt gatccgcctg   1200

ccttgacctc ccagagtgct gggattacag gtgtgagtca ccgtggccag cgtattatga   1260

gattttcttc ccctgtgtca ctggaacaca aactgtttcc agcctgtgtg agctgcaagg   1320

attgttcctc ctggtgtaat atagtttgga tatttgtccc ttccaaatct catgttgaaa   1380

tgtgacccc agtgttggag gtggggccta gtgggaggtg tttgggtcat gggggcaaat   1440

ccctcatgaa tggcctggtg ccatcttttg gtaatgagtc agttcttact ctattagttg   1500

ccgtgagatc tgattgttaa aaagagtctg gcacctactc ctttctctct tgctccctct   1560

cttattatgt gacacaccag ttccccttcc ctctctgtca cgattcattg ctccctgaag   1620

ccctcacaag aagcagatgc tggcgccatg cttgtgtagc ttgcagaact gtggccaaat   1680

aaacctcttt tctttataaa ttacccaccc tcaggtattt ctttatagca atgcaaatgg   1740

actaacacaa gatggttgtt tccctggcct tgggtagttg acttatatcc atctattgat   1800

aagtattcac ctgaagactg gaaggcaata tgtttagtct ctttctgtgc agttcttgtc   1860

tccatgcgcc tttcttctct tcagtgctct gccttgcaaa ttttagttgt tttggtcttc   1920

cagaattttc aactgtcttc tcaactcagg gagactacta ggctctgttc aagttctctc   1980

tccctacact ttatcctgta agttctccaa gcagaaagca gtaagctggg acagtcatag   2040

tactcaccta atttctcccc tttttgtgat cactgttcta cactgtctta tcagctcatt   2100

gtttgtttgt gttagtttgg ctatatctat ttttaggtta gttcaagatt ttgacaagtg   2160

aaattgagca tcacaattgg catatagtag ataattcata aatgttcaca tgaaataaat   2220
```

```
gggaggattt ggttaagaaa tttattacag gagttatagg agtttcttag gcattgctct 2280

ttttgtttgt ttgttttgag acggagtttt gctcttgttg ctgggctgga gtgctgtggc 2340

gcgatctcgg ctcaccgcaa cctccgcctc ccgggttcaa gtgattctcc tgccttagcc 2400

tcccgagtgg ctgggattac aggcatgtgc caccacgcct ggctagtttt gtatttttaa 2460

tagagttgtg gtttctccat gttggccagg ctgttcttga actcctaacc tcaggtgatc 2520

cgcctgcctt ggcctcccaa agtgctggga ttacaggcgt gagccaccat gcccggccac 2580

attgctcttt cttattggct ttcctattgt aggcattgta atgtcatgta actaacaagt 2640

taaaattttt tttcttttt tgagacagag acttctctg tcacccaggc tggagtgcaa 2700

cggtgcgatc tcggctcact gcaacctcca tctcccaggt tcaattaatt ctcctgcctc 2760

agcctcccga gtgcctggga ttacaggtgc ctgccaccat gcctggttaa ttttttgtatt 2820

tttagaggcg gggtttcacc atgttgggca ggctggtctg gaactcctga cctcaggtga 2880

tccacctgcc tcggcctccc aaagtgctgg gattacaggc atgagccacc gcgccctgcc 2940

aaaaattaaa aaaaaaagtt attatttttt tgggatggag tctcactctg ttgcccaggc 3000

tagagtgcag tggcgcgatc ttggctcact gcaacctctg cctccagggt tcaagcaatt 3060

ctcctgcctt agcctcctga atagctggga ttgctggcgc ctgccaccat gcccggatag 3120

gttttgtgtt tttagtggag acggggtttc gccatgttgg tcaggctggt ctcgaactcc 3180

tgaactcgtg gtccagctgc ctcggcctcc taaagtgctg ggattatagg cgtgagccac 3240

tgtacccggc ctaaaattat tcttttaaaa atggtaacag ggtctcacta tgttgctcaa 3300

gctggtttca aactcctgcg ctcaagcagt cctcctgcct tggcttccca aagtactagg 3360

attacagatg tgagccgctg tgcctggccc cgagtagttt ttattgtata cgtatactgt 3420

gactggaagt taggactgtt tttaggaaat acactgtgag attttgaagt ttgccgcatt 3480

gtctttgttg tgatcagtgt gaagttttga acatagtgga ttttgattta ggggatgaaa 3540

attcattcaa gatgatactg tcagttttca gaaataatga agttgtatag tgttttctgc 3600

aatggaaagc tgaacttta caaaggctca gttagcattt ctgaaatgat ggtgtgctaa 3660

ttatctgttg aaatttaata atgaaaaata aaattttcag tccatggaca aataaatagt 3720

attttataga ttaaaaaact ttgtatttca tagaaaatta tcttttaatt ccaaaattag 3780

attgaaaaat tataagcaga agttgtctga catagttatg ggaagtgtct ttggaaacca 3840

tgctatatat gttacagata atgtgattaa aggttttttc tcacttttac caaaataaaa 3900

ttaaaagtag                                                         3910
```

<210> 696

<211> 3831

<212> DNA

<213> Homo sapiens

<400> 696

```
ctctcccagc ccctcagagc ctgtgggagg tggtgggatg gactctgctg gcactggtgc    60

gggatgggtt gcagctgcag ctgtgggtgg ctttgttctt acagcctagc tttcagagtc   120

ctggtgcagc ctggcagcag tgtttgggga acaggcgaga tagaggagct gagccccttc   180

tccaacagcc gtcctctctt tctgttgacc aaccagagag cttttttgcc tgaggtcagc   240

aagctggcct ccctggttgg caggggggagt gcttggcttc catctggcat ggtttccgga   300

tgggagaaag cccctgaggg tctggtggta agtctgcgat gcttcccatc aggagagtgc   360

agtgtgcagt gtgtcccctt gggcatcctg cagcttgcca ttcctctgct ttctctctgc   420

agctccggag ttgggctgct cacaaaccaa gctgtctgtt tatatggagt gcctggaggg   480

catctgccat gagtctgtcg ctaactgcac taaccaggag agctggctgg ttggggagaa   540

gacactaacc ctgagctgtg gctaaaggaa gtggaggggc cgtgggatgc ggagagccga   600

gggctaactc ccggacagcg gaacagagag agctgccgac aaacagacgc aggcggagga   660

gccgtcacct cccagaatga ctagtgccgc ccctgctaag aaaccctacc gtaaggcacc   720

accagagcat cgggagctgc gtttggaaat tcctggatcc cggcttgagc aggaggaacc   780

cctgactgat gcagaaagga tgaagctctt acaggaggag aatgaagagc ttcgccggcg   840

cctggcctcc gccaccagac gcactgaggc cctggaacgt gagctggaaa ttgggcagga   900

ctgcctggag ctggagctgg gccagagccg cgaggagctg gacaaattta aggataagtt   960

ccgcaggctg cagaacagct acacggcttc ccagcggacc aaccaggagt tggaggacaa  1020

gctgcacaca ctggcctctc ttagccacag ctggattttt gcagttgcgt ctgagtttgt  1080

gtgtcttctc ccttgccctg gccttctcct cagctgagat ctgggattgt gggccctggc  1140

tgttaccctg tgccccttga gtacacccgc tcctttctct tccctgtatg aggcccgttt  1200

aactgtcaat gcctccctcc caggagagag gtggggagcc tagcctgctc tgcccttggc  1260
```

```
tctggtagag gtactgattg atgtctccac tgaacaccca aagcttcttg gctccagtgg   1320

cagcaagccc aggctgtggg agtggggagg ggaggctgca gatccagtcc ctgaactgga   1380

gatcagaagg ctactttga gcctgcagct tgctccctgc tcaacaaggt gccctggctg   1440

ccaccgcgcc ctgcttcctc ttccctctcc tagcctgatg ctggaaacag ctgcacacat   1500

aggaggcttc agcccctgg tttgcagtta ctgccgttga ggtaccagct gccttgcctg   1560

gtgcccagag cccctggaac ctcaggggat ggacagctct tatactgcct gtgtcctggg   1620

cccaggtggc aggaagtcat gctaagaaag cccccacccc acagccagtc cagagagcgg   1680

gagagatgcc cagtctcctt ctgtctgtcc gtcatttgtc tctgctctgt ccgccttggc   1740

tgccctagca cctgtggcct cttgtgtctc caggatggga ggaggtggag ggagaggaag   1800

ggctggctag agtgtgggct gggttaacct caagtctgtg cttcagatca agaaggctga   1860

gatggatagg aagacgctgg actgggagat tgtggagctg accaacaagc tgctggatgc   1920

caagaacacc atcaacaagc tggaagagct caatgagcgg taccggctgg actgcaacct   1980

ggctgtacag ctcctcaagt gcaacaagtc ccacttccga aaccacaagt ttgccgatct   2040

gccctgtgag ctacaggaca tggttcggaa acatttgcac agtggtcaag aggccgccag   2100

cccaggtcct gctcccagcc tagccccagg ggctgtggtg cctacctcag tcattgcccg   2160

agtgttagag aagccggagt ctctactgct caattcagcc cagtcaggca gcgccgggcg   2220

ccccttggct gaggatgtct ttgtgcatgt ggacatgagt gagggtgtcc caggtgatcc   2280

agccagtccc ccggcccctg gcagccccac cccacaaccc aatggggagt gccactctct   2340

gggtactgcc aggggctccc cggaggaaga gctgccctg ccagcctttg agaagctgaa   2400

cccctaccca accccgtctc caccacaccc actgtatcct ggccgcaggg taatagagtt   2460

ctctgaggat aaggttcgga tcccccgcaa cagccccctg cccaactgca cttacgctac   2520

ccgccaggcc atttccctga gcctggtaga ggaggggagt gagcgggccc gccccagccc   2580

agtgcccagc acccctgcct cagcccaggc ctcaccccac caccagccca gcccagcacc   2640

cctaacactc agtgccccag ctagctctgc cagctctgaa gaggacctgc tggtcagctg   2700

gcagcgggca tttgtggacc gtactccacc acctgctgct gtggcccagc gcacagcctt   2760

tggacgcgat gccctccctg agctgcagcg ccattttgcc catagccccg ctgacagaga   2820

tgaggtggtc caggcacctt ctgcccgacc cgaagagagt gagctttgc tacccacaga   2880

acctgactct ggctttccca gggaggaaga agagctgaac ctgcctatca gtcctgagga   2940

agagcgccag agcctgctgc ccattaacag gggcacagag gaggggccag gcacttccca   3000
```

```
caccgagggc agggcctggc cactccccag ctccagtcgc ccccagcgca gccccaagag    3060

gatggggggtt caccacctgc accgcaagga cagcctgacc caggcccagg agcagggcaa    3120

cctgctcaac tagggcccct gctggccttc ctgccattgc tgcaccagga ctgcaaggag    3180

tccccacacc ttggcagctc agggtcccca gtccaagccc ttgacctctc ctctatccag    3240

acccgcacag ctgtttcctg tgtggatggg gtcaggttgt gggccatgcc aggcctgtca    3300

gctgcgttga ctgactgcag cagcttgcct catggttttc cctttttctt agaatattta    3360

ttcttcagag gtaacatgca gttgggtctc aagacctttc ctccaatcag cccaacccag    3420

cccagactgg gcttttctgg ggagctgagg agtttatcag tattcatctt ccatcctttc    3480

atagtcacaa gttttgttat tttgtttttt tttgggggtg atggtgtaat tgttaacctc    3540

atttccgttt cctacctgtt tgcttccccc cccagtcctc cgcatgagct gttgccctcc    3600

aggggcctgg cacagctggc cttggggacg agggagagga ctgattcagg gccccctcag    3660

ctgtctcctc cctccctctg gaaaggaggg tggggctcag gggcctcaag ctgggctctg    3720

tgtgaggcct ggcccccact cccaaccttg gctctagact gttactctta agctttgaga    3780

aattttcaca ttgatgacta ttttaaaatc aaataaaact attttactgg t            3831
```

<210> 697

<211> 4631

<212> DNA

<213> Homo sapiens

<400> 697

```
acttgttcca ggaagtaaac agtgtgatgt cggccaccca ggaatttgga gggggggtata    60

cattcccaag agcccccaga ggcgccgggg cagaggccgg ctggactcca tgggctgaag    120

ttgatggtcg tgggtcagtt agaggggtgg tggggcagg tgtggccggg caggggcacg    180

cacggtggag agttggccag ggcaaatctt gtgaccgaca cacagacggc aaattcattc    240

cttcagccag tgttgaaaga ataagttact gccacagaaa tctcaccaag cacagaacaa    300

atgcatcaca cgcatttata gggcaccgac tgtgtgcctg gcccacggtg tgtgtcttgg    360

agccgggcca tggtatacct gattttaatt ctgaggcttc aaataagaga agattaaacc    420
```

```
ctggaggatg ccatgtctcg gaggtgggca acctgcagcc cccatcccac agcctgcagg   480

tttgcagcgg tggctggggc tgtgtcccag ttccagccgt ctcaccatgg gtagctggtc   540

acttgctgag tggggggaag ctgatgcatt tttgtccggc aaggacaggg gtgtccacct   600

gctcaagctg cccttgcaag gtcccccaaa cgggcggttt caacaacgga aagtgtcctc   660

ccgcagttct gcaggccaac gtcccggacg gaggtgtgag cagggctggg ccctcctggg   720

ggcaggaggg aggatcttcc cggcctctct ccttggctct ggggtggccg tcttcgccct   780

gtgccttcac atcctcttcc cctgtcagtt tgtatctgca tccacatttc ccttttatga   840

ggacaccagc catgggacca gggctccccg caaagaaccc tgtttgaatt ctcttatctc   900

caaaggaggc aaaatgaatt ctcacctcca gaaagaccct gtctccaaat aaggtcacgt   960

ggtggaattg gaggttagag ctccaatgtg tcattttctt ggggggctcc tggagacacg  1020

agtggggtct ccacctggcg atgttggtgg ggcttgcgag acggttctgg cggcgatttc  1080

tgccagcatc gggcccctga gctcagctgc tcaggggccc cggggggtgtg agctcggggа  1140

cagcaaggtg catctgggga gggcctggcg ggtgcatcgg cggagtgtg ggaaaagctg  1200

ttctgtgccg ggagagtgga gccatggtct ggaggctgga gggccggccc tggggaagga  1260

gcttggggca ggatgggtgg tggctgtggg accggccggg gtggtgcagc ccagttgaat  1320

aggcctcaaa cgccccgaat gcagcttgaa cctcatcctg aggccgcgat gcttgaactc  1380

gcagcccaga cctgtgccgt gtgggcactg gctctggtgt gtccagaggg cctgggggtgc  1440

tctgatctgc ctggagctct gagagcctga ctgtgggtct gggggtgaga tggccctgca  1500

gggaaaccca ctggacagag ccgctgctgg cccctggggt ggacggaaac aagtgcggga  1560

ggcagacagc ctcctcctcc tgcttgttta gagaaaaaac agacttgtga cactgccctc  1620

ccggccgtcc gggcattctt tccggggaca tggccgcttt ggtcagtgac cctagggaag  1680

gtctgcagaa gagcttgagc tttcaaaggg ctggggcgg ggagagaggg agggagagcc  1740

ggctcctaag ccctgggggc tgaggctgac gcccagcatg gctgcagagt ccctgggcat  1800

agacagccac ccacgtgccc tcgggtcaca ccctctcggg ggacaagccc aggcagacag  1860

aggcatcggc ccaggcccga gcagacggaa accgctttcg ctgccactga gcccagggag  1920

ggggctcctc gtcatctgtc cacacggaga ggagtccgcg ccccatcttg tccggcgtgc  1980

agaagctccg cctgtgcaga cgggtggtcc tgccgtctga aacctgttac ctgggagggg  2040

gtccaagctg gaaacggtgg agggttccca aggatcccag cagattgatg gacggcaggg  2100

ctgcaggcgg acggggcggg ggcttcctaa ggagagaggt gggcagcctg cagcccccat  2160
```

```
cccactgccc ccaccccacc gtgtggctgc tgcctggcct cagtttcccc atctgtgaaa  2220

caggtgaaat gggctcactg tccgggcctc ggagcattct tatgggggtc agggcctggc  2280

aagggctgtg caggctgggc tcagaactag gccgcccagg ctgcgtggcc acaggggtct  2340

cggcccccac ttctccgttt gagacctgcc cagccttcct gtttgctgca gctacggccg  2400

tcagattcgc caccaggagc tgcggttgtc ctcccagaca gggagactga ggccctgaga  2460

ccgaggctgg ccggggtcag acatgcaggc cggggtgagg caggacacgg cttgcagccc  2520

cagctccctc tgtggggcca ggaagcttct agaacagtcc agttcacgct gacatggcag  2580

cagctgctgt ccgggacccc acaggcagca acgtggacag acgggtcacg atcactatat  2640

ttttgttttt ctgagacggg gtctcagtgt gttacccagg ctgatctcga attcctgggc  2700

tcaagcaatc cttctgcctt ggcctcctga gtagctggga ctacaggtgt gagccactgc  2760

acccggcttc cagatcatga tttaaccaac cctccctccc agaagccgca gcccgtgctg  2820

ggagcctggt ggttttgtc ggagggcctg gggctgggct ggggcctcct gggatcttgg  2880

tgtgttttct gcccagggta tcctcccaag gtgcccatca ggagtcccag gaccagctgg  2940

aggtcacgtg gggctgtcct cttggcgtcc ccagaagggc cctgctgtcc aggctggccg  3000

gggacctcac ctcgggaact tcccgggacc cttgcatccc tgtggtgtag tgtgcgagtc  3060

aggggtgagg ctgggccctc gctgagcacc tgggaaggca ctccaccacc caaagagaga  3120

accatgtaac ctcagtgggc ttggcagctg tctccccgct gtgtgacctg gggcaggccc  3180

ccgagccgct gtctctgtga gatgcagaca taaccggtgt ctgctccaca ggtcgggtgt  3240

gagccttagg ttggtatttg tgaagcgctg agaaggacac ccttcactgc agggtgaaca  3300

gaagtcaccc ttccaacaac agaagcgatg atgtgtggga cgaggtggat ccggggcctg  3360

tcctgccctc gggggcagcg tggctggccc tctctgcata tggtgccgtc ccctgccctg  3420

ggagcctctc tcctccgttc cctgtggtcc tctgggggca tcaggcctct gcgacccacc  3480

tggtcaccaa gcgttgtgat gggaagagcc ccctccgagc tgagctgtgc tgaaccgccc  3540

tgggctggtg acctcacctc ccaggcctgc ttcctgccac ctctgactgt ggcaggagca  3600

ctggtgaggg gcggcctgtc agggtacagg aggtgaagct ggggccgtct gatgtcgtac  3660

tacggtccca gcagcatcac cgtggccgga gcagggccgg gagccctggc ctctgcccac  3720

ctgtggtcct gtgccacctc attccttcac agcccccat cctggcctcg gtttctctgt  3780

ttgggcaaga tgacctctga ggccctccag cccctccctt cgtggactct gagctgcttt  3840

ggacatcatg tttttatctt ccagaaactt cagtgctctc aagaaggaaa atatttatga  3900
```

aaacaataaa ctggtgagtg gcccccgccc cggcctcaca gctggcttag ccagcctgct 3960

gagccccacc cacgtccgag ggaccgaggg actccccca ggccctgcac ctgccttggg 4020

agtcctgcct gggaatcggg ggctccctga ccagcccggc aacgcgtcct gggctgggtg 4080

accctagcgt tctagaaata gcctcttatc ttggcaccca gggcatactg gtccctctt 4140

ttcctgagct ggggagcaag gtgccaggag gtggctgggg accctacttc actgcagggg 4200

gctcagccca gtctgcctca ggcagaacaa gggtctgggg gtggctgtgg ggggctgtgg 4260

atgggtccca gtgggcctgc tgccactccc accacatggg acctgccttc cggccctgcc 4320

aggattccag tcctgccctg ctcaccccag cttccaggcc cttccctgtg tgcagcctca 4380

gtttgcctgc tgcagaataa gcaccacgct ccctcgtggg cagaggcacc ggcagactca 4440

ccacgcgccc tgcaggcatg tcctgtgctg tgccaggcag gccccggcca cgtccctgcc 4500

cccggagctg gccttcagcg gggacagtgg tcagcactga agacagtcat acctgcccgg 4560

ccggcactgc cctgctcagc acggggacaa tttgaactta agctttaact taattaaaat 4620

gaactaaaat t 4631

<210> 698

<211> 5107

<212> DNA

<213> Homo sapiens

<400> 698

tttatcacaa aggctgtgta ggctgcaaaa agacctaaga gcccccaggc acgagatgaa 60

gacgtgggcg cctccctctt acagctgctc aggtggtgct gaggcgccag tgccccggtt 120

cttttcctgc acagacacag ctgcacatgc gtcaggcagg gtcctttact ggggctgccg 180

gtttgggtat ttactccagg gctggggtcc cctccagggg tccatgagcc ccacggcgac 240

acttggccag ccctgcactc caggccggca ctttgggcca ctcagctcca agcgcttatc 300

ccgaccaggg cccggtgtgg atgcctctgc acgtctccag cgctgcttgg tcacagccct 360

tggcagaagc tgggtgcggt ctgtgaacag ctggggatgc agctgggctt tgcaacctcc 420

aggcagagat gggcactgga cactgagccc ttggcagccg gtgcgcagca cgcaaccgtc 480

```
catccctggc ttacctgctg gggccaacca agcactgggc cctgtcggaa gctggcaccg   540

tgctcaggaa gccagtcagg aaagaacctt ctcctagagc tgcagtcgag ttgggtcagg   600

gatgaaattg gaccaagaag gcaaaagaga tggctcagaa gggcgggggg aggggcaggg   660

gcacgcaggt ggtggggcag cgctccctga ggaggtcagg acccttgggg ccaggaagag   720

agctgtgtgg tgtgggggtc accagcagct ctcagggacc gcagatgggc tgaggctgca   780

gactctggct tgttctgagt ggggaggggc accaggggct ttgagcaaaa aaggctccgg   840

gcagacttgg gcgtcgaagg ccagctccgg ccactgtgca cagagcgtcc tctcaagcag   900

gcggctgaag ccaccccaag gctgggcggt ggaggcccag ggctcccggt gctgagttgg   960

actgagggcg gggactgagc tttggtgggt cgggtaggag cctggggccg gaggtggggg  1020

ccgagtccga gggaggatct ggggctgtgt gagtcttgga cactcattcg ggatgtggga  1080

tgggcagcat catttatctg tttctgcctg catacaggta cgggtgtttt tcttttggga  1140

ggccttgagt atttatttaa taatggaatc acatttataa accactctgc agctttcctg  1200

ctcagcagca cgtcatcagc tattttcctg tgagcacatg attgccggct gtgcgctggt  1260

tctccgagcc atgttccccg ttcacaggct cttacccgca gtgctgccac ggcgccgtgt  1320

gcatcccagg atcttgcagg tgtccgctgg ccgccgtctg cagggagtgg cccttaagcc  1380

ctcacttggt tctgtgtccc caggcttgct ctcctggcct cttccctcac catgccgcgt  1440

ccccttactc tgaccttggc caatcaggac ctgcgtgtct ggtggatttt ggaagccacc  1500

tcactgggga cgggagacat aggccagggg acagcctgtg agagggctgg gccacgggga  1560

ctgcagagga ggagcatcca cggcacctag atgcaggaga ccctcgtggg caggagcgtg  1620

gctggtggcg cggtggcctc aggagcagtg aggccgtccc ctcaacctct tctgtggaag  1680

cagagatgcc actcgccaga cggcgtccag taaagagggc ctgggaccct ctgggggact  1740

ctcaagtccc agaccccctg gtccatgtcc ttgccactgt gctggccgag gggcccctca  1800

gcccacatgg ggcccaggga gagggtcctg cctgtctggg cgggcccctt ggtgggccct  1860

ggaggctcca gtctcaggga gaggaaagcc tggtctgcct tgacaccctc actcgcgtct  1920

ccggggtctc cagggcctgg cccaggcttc ccagggctgc gctgtgcttc cttggtttct  1980

ggaatccctt gcagatgaca gacaagagaa acgggcctat tgatgtctag cccgtgtgtt  2040

gtttactgtt cctggagtga gtggtggaaa gccctgcgac gattggttca gaggataagg  2100

cctcacctgg agagtatgtc ttgtttactc cgatgaggcc tcacctggag agtgtgtctg  2160

gtttactcca atgaggcctc acctgcagcg tttgtctggt ttactccgat gaggcctcac  2220
```

ctgcagcgtt tgtctggttt actccgatga ggcctcacct gcagcgtttg tctggtttac 2280

tccagtgagg ccttacctgc agcgtttgtc tggtttactc cgatgaggcc tcacctgcag 2340

cgtttgtctg gtttactctg agcctcacat tcctttcagt cgctccgtga atcactgtct 2400

ttggtgggtc aggaggaatc cactccctgg gcctgggcct ggaccagtgc tggtcagacc 2460

tgctgtgtgg ggcctgggga cgcttgcagg tgtggactgg cagctcatca ggaagagctg 2520

gggaaggcgt gagaccaaga cagcctccgg cctggagaag gcgtgaggcc taggcagcca 2580

catggctggg gacagcgtga ggcccaggta gcctctgagg gttgggggag gcatgaggtc 2640

caggcagccc ctgagggctg gggaggcgca aggtccaggc agcctcagga ctggggaggc 2700

gcgaggtcca ggcagcctca ggactgggga ggcgggaggg ccaggcagcc tcaggactgg 2760

ggaggcggga gggccaggcg gcctctggtg ctgctgcgtt gctcctgtgc agcctcgggg 2820

ggccccaggg catctggagg catctgtgag cgtgtgggct gtcccagctg acgtgggtcc 2880

tttgctccac aggccaccag cttgggctcc ccacggaggg cagcaagtgg gacttgggga 2940

acccggctgt caacctgtcc acggtggcag tgatgcccgt gtcagaggaa gtgcccctca 3000

ccgccttcgc cctggagctg gagcatgccc tcagcgccat cggcccgacc ctgctgctga 3060

ctagtgacaa cataaaacgg cgccttggct ccgctgccct ggacagtgtt cacgagtacc 3120

ggctgtccag ctggctgggg cagcaggagg acacccacag gatcgtgctc taccaggcag 3180

atggcacgct cacaccctgg acccagcgct gcgtgcgcca ggccgactgc atcctcatcg 3240

tgggcctggg tgaccaggag cccacagtgg gcgagctgga gcggatgctg gagagcacag 3300

ctgtgcgtgc ccagaagcag ctgatcctgc tgcacaggga ggagggcccg gcgccagcgc 3360

gcaccgtgga gtggctcaac atgcggagct ggtgctccgg ccacctgcac ctctgctgcc 3420

cgcgccgcgt cttctccagg aggagcctgc ccaagctggt ggagatgtac aagcatgtct 3480

tccagcggcc cccggaccga cactcagact tctcccgcct ggcgagggtg ctgacgggca 3540

acgccattgc cctggtgctt gggggagggg gagcaagagg ctgtgcccag gtgggcgttc 3600

tcaaggcctt ggcggagtgc ggcatccctg tggacatggt gggaggcacg tccatcgggg 3660

ccttcgtggg tgccctgtac tctgaggagc ggaactacag ccagatgcgg atccgggcca 3720

agcagtgggc cgagggcatg acgtccttga tgaaggccgc gctggacctc acctacccca 3780

tcacgtccat gttctccgga gccggcttca acagcagcat cttcagcgtc ttcaaggacc 3840

agcagatcga ggacctgtgg attccttatt tcgccatcac caccgacatc acagcctcgg 3900

ccatgcgggt ccacaccgac ggctccctgt ggcggtacgt gcgtgccagc atgtccctgt 3960

ccggttacat gcccctctc tgtgacccga aggacggaca cctgctgatg gacggggggct 4020

acatcaacaa cctcccagcg gatgtggccc ggtccatggg ggcaaaagtg gtgatcgcca 4080

ttgacgtggg cagccgagat gagacggacc tcaccaacta tggggatgcg ctgtctgggt 4140

ggtggctgct gtggaaacgc tggaacccct tggccacgaa agtcaagctg gaggtggtga 4200

agagcagtga ctactgcgag tacctgcgcc cccccatcga cagctacagc accctggact 4260

tcggcaagtt caacgagatc tgcgaagtgg gctaccagca cgggcgcacg gtgtttgaca 4320

tctggggccg cagcggcgtg ctggagaaga tgctgcgcga ccagcagggg ccgagcaaga 4380

agcccgcgag tgcggtcctc acctgtccca acgcctcctt cacggacctt gccgaaattg 4440

tgtctcgcat tgagcccgcc aagcccgcca tggtggatga cgaatctgac taccagacgg 4500

agtacgagga ggagctgctg gacgtcccca gggatgcata cgcagacttc cagagcacct 4560

cagcccagca gggctcagac ttggaggacg agtcctcact gcggcatcga caccccagtc 4620

tggctttccc aaaactgtct gagggctcct ctgaccagga cgggtagagg cctctgctaa 4680

agagcccgga tgcagcgtct tccgtgggac tgtccccaag gctgaggctc ctgccaagtc 4740

ctaggggcct ctgtacctgc cctgctggaa gccctgactt ccccgggggcc ccaggctgtg 4800

ttagggttct ctgggcctct tctttgtacc agcagccctg catacagggc cctgtgagcc 4860

cccctgcagt cctgtgaggc ccctgaagct ctgtgaggcc cctgaagctc tgtgaacccc 4920

ctgcagccct gtgaggcccc ccgaagccct gtgaggcccc ccgaagccct gtgaaccacc 4980

tgctgccctg tgaggccccc aaagccctgt gaactgcctg ctgtcctgtg aactgcctgc 5040

tgccctgtga ggtgtgggag ccctgatgct gccgtgtgat gtttcaataa aggtggatct 5100

cactgtt 5107

<210> 699

<211> 3806

<212> DNA

<213> Homo sapiens

<400> 699

tattagatat ccaagggact tggaagagca gggctataaa tctgaatggt atttaaagcc 60

atggagctgg atgaagtctc ttagagcaag taaaaagaga gaaaggagga ctaaggacca 120

agatctagag tccctccagc atttaggcag tgatgagaaa gatgcagcaa aggagcagaa 180

ggaacagcta gtgaggcagg cagagactca ggcgcataag gtgtccagaa aacaaaggaa 240

aaagatgcct ggacggtggc cgtttatcct tcaaaactca tatcaggttg ctatgtcctc 300

caaaaagcct tgcctgaccc actctccacc ctcccctcca ggctttgcca gggatgcctt 360

ttgtgctcct gtagcatctg tagaacacgt cacactgtgt cttggctgtc aggttgtctg 420

ctccactgaa ggggagagga acttaactaa ctcctctgaa gtaaatggct cttccagatt 480

gtgaagcaca caggacaggc taggcctctg cttccccgaa gcttaccatc ctgtaggcta 540

aagaagaata actaggctgg gcgcggtggc tcacgcctgt ggtcccagca ctttgggagg 600

ccgaggtaag cggattatga ggtcaggagt tcgagaccag cctggccaac atggtgaaac 660

cccgtctcta ctaaactcca aaaattagca gggcatggta gtacgtgcct gtggtcctag 720

ctactgggga ggctggggca ggaggatcac ttgaacccag gaggcagaga tcgtggtgag 780

ccgagattgc accagtgcac tccagcctgg gcaacagagc aagactgtct caaaaaaaaa 840

aagaaaagag gaagaagaac taaaaaactg cagcccaagg ctgctggtca gatgagtgta 900

ccatcaaagt caagtccatc cacatgctga aggctggatc tgagcttgta ccttgaggac 960

tggaacctcc acctccacag ctgctggcat aaacagtggg ctctgtcagc ccatcttttc 1020

tacctgagag ccaggttgtt cactgggggt tttatctcat atttattcag aagtaaaaac 1080

aaattttact taaaatcatc tcaaggatga cataggatgg taggataggc cttaccagca 1140

tcaagtggga taggtttagc ctgcttgctt agaccactct ggtgctgttt tcacataagt 1200

ttttagctct tcttaaacgt aaaccgtaaa ataatagaat caaggtctga gctacccaac 1260

ctgagtccat ctaagaaagg gtgatcttgc ctccaaaacc attcttctaa aaagactcct 1320

tagataatga cagtagaaag acaataaagg tacagtctct gagacccaaa ataatcaaac 1380

ctagccaacc tctgaataag atccagaagg agtttgaatt tggcagattt aaagagcaat 1440

acagaatttc aatcaagacc ctcagttaag tacagtaagg tctatcacct gaagaatata 1500

tctctcaggt tccttttgtc gttaagactt tgatcctttg actttcagat gcttacagat 1560

gagaagctat tgctaaccag ccctctccac ccaggcttgg agggcttcag ggttgcaggg 1620

tcccagagct cccgcctcca tcagaactgc tcttctcagc ctctttaagt atttggggag 1680

tcaggtggat ggtctgtggc atcattcata aacttgtttc tgaaaatgtc cttgtagaac 1740

cctacttgct cataacttgg agataatctt tctagagctt tctgttctga tggattggac 1800

```
tattcacaat atcatcttta gagtcttata taattgcaag aatacacctt agtataccac   1860

ttaaaaaact gttgtgtcca ttactgcaga aactgcactt gaatccagct tattgtatgc   1920

atagtctact tggtattagt ttgatcagct attgtacctg aacattgtag actttctttc   1980

catagcttag aagagaccat tgctgaaacc tgacttccta actcccacga ttacagcctc   2040

tttagaaact ttaccatgtt tgtgatagga atagtaaagg aggcctcctt gggcccacct   2100

caaaggaggc cacttttaca aggatcagga tagattaagt cactgttcac attatttttt   2160

ggtttgtttt ttgggttttt ttgtttgttt tttgttcttt tttttttttt gagatggagt   2220

ttcactcttg tcgcacaggc tggagtgcaa tggcaccatc tcagctcact gcaacctcca   2280

cccaccaggt tcaggccatt ctcctggctc agcctccgaa gtggttggga ttacaggtgc   2340

ccgctgccac actcggctaa ttttttgtatt tttggtagaa acagggtttc accgtgttgg   2400

ccaggctggt cttgaattcc tgacctcagg tgatctgccc tcctcagcct cccaaagtgc   2460

tggaattaca ggtgtgagcc acagcacccg gcctacattc tatctttcc tttccacctg   2520

gccaccttct tcccccatca ccgtaacaac acacatctca cattgatcag ttatggtgtc   2580

atcaggtgta atgagaagaa caagatgaaa ttgtagcctt cttccacggt tctgaggcat   2640

gtgaagcata agacagcctc atcccatggg ctcttggccc cttccatgca ccttctaatc   2700

acctcaacac catttcctcg gtcagttttc ttatttgctt cccagaaccc taagtgttct   2760

ccctagtgtt gtgcctcact gcataaaacc tacatggcag taagaaaaag taaagaatgt   2820

aagacctatc acaactatat gccagtgaca aaagaaaaca tagaatgtca gcacatacca   2880

gggactgtgg aatgtcactg agctgcagca ggtttaagtg caggaacagc cctctgagag   2940

atccacagga agaagaatat agccagagta gattcaggt gtctacccac tgcagatctc   3000

ttccccttaa ggtaggtgcc cacctgggct caccccaatt ccctctggag atttactttt   3060

ttagacttcc ccagctatca tcattgaacc atagggtttt ttaccccaat tacaattctg   3120

agatgatggc taacaggaat tttgtgattt cagggcaaag atggcactgc agcagtacct   3180

ggcatgatgg gagtgcccct gggcacctgc gagcatccca cctccttgtt taaggaagta   3240

caggaaccag cctcatttga ttccttctat ttgcacaagt caccttggac tgcagggagc   3300

tgttttgcaa aagcagttta gtaggcttag atctcaaatt catcttgaga acattttttt   3360

gaggtagtaa tttcctcaga agactcttgt gttttgtttt ggtttttttc tctgagctac   3420

tcggactctt tattagaaca atcaatcatt ttcctttgga cctacaattt ttgcctatgc   3480

tgcagccact ttgtgagtga gaatgaatat gtctgtgtga acacacaggc atgcgtgtgt   3540
```

```
atgtgcacgt acatgggcca gaatgaatgg atgtgtgtgt gtgagggata cctcagattt    3600

ttcttttctt atcttgtgtg aaaatctctt ttctacagat tttccagggt ttaagcattg    3660

cttgctgtat aaaaaacttt actgaattat atacagtttg aatgaaatgt tattttaaaa    3720

acaaaacaat tgttaagtgt tccataaagg ttatgttgaa ttttggtcag atgaatattt    3780

gtaagtaaaa aatatatgca tttctg                                         3806
```

<210> 700

<211> 4644

<212> DNA

<213> Homo sapiens

<400> 700

```
aacctgtctt tggaagtagt gatggccatc gaggcaggcc tgggggatct gccacttttg     60

cccttctcct cccctagttc gccatggagc agtgaccctt tctccttcct gcaaagtgtg    120

tgccataccg tggtggtgca aggggtgtcg gcgctgctcg ccttcccccca gagccagggc    180

gaaatgatgg agctcgactt ggtcagctta gtcctgcaca ttccagtgat cagcatcgtg    240

cgccacgagt ttccgcggga gagtcagaat ccccttcacc tacaactgag tttagaaaat    300

tcattaagtt ctgatgctga tgtcactgtc tcaatcctga ccatgaacaa ctggtacaat    360

tttagcttgt tgctgtgcca ggaagactgg aacatcaccg acttcctcct ccttacccag    420

aataattcca agttccacct tggttctatc atcaacatca ccgctaacct cccctccacc    480

caggacctct tgagcttcct acagatccag cttgagagta ttaagaacag cacacccaca    540

gtggtgatgt ttggctgcga catggaaagt atccggcgga ttttcgaaat tacaacccag    600

tttggggtca tgccccctga acttcgttgg gtgctgggag attcccagaa tatggaggaa    660

ctgaggacag agggtctgcc cttaggactc attgctcatg gaaaacaac acagtctgtc    720

tttgagcact acgtacaaga tgctatggag ctggtcgcaa gagctgtagc cacagccacc    780

atgatccaac cagaacttgc tctcattccc agcacgatga actgcatgga ggtggaaact    840

acaaatctca cttcaggaca atatttatca aggtttctag ccaataccac tttcagaggc    900

ctcagtggtt ccatcagagt aaaaggttcc accatcgtca gctcagaaaa caactttttc    960
```

atctggaatc ttcaacatga ccccatggga aagccaatgt ggacccgctt gggcagctgg 1020

caggggagaa agattgtcat ggactatgga atatggccag agcaggccca gagacacaaa 1080

acccacttcc aacatccaag taagctacac ttgagagtgg ttaccctgat tgagcatcct 1140

tttgtcttca caagggaggt agatgatgaa ggcttgtgcc ctgctggcca actctgtcta 1200

gaccccatga ctaatgactc ttccacactg gacagccttt ttagcagcct ccatagcagt 1260

aatgatacag tgcccattaa attcaagaag tgctgctatg gatattgcat tgatctgctg 1320

gaaaagatag cagaagacat gaactttgac ttcgacctct atattgtagg ggatggaaag 1380

tatggagcct ggaaaaatgg gcactggact gggctagtgg gtgatctcct gagagggact 1440

gcccacatgg cagtcacttc ctttagcatc aatgctgcac ggagccaggt gatagatttc 1500

accagccctt tcttctccac cagcttgggc atcttagtga ggacccgaga tacagcagct 1560

cccattggag ccttcatgtg gccactccac tggacaatgt ggctggggat ttttgtggct 1620

ctgcacatca ctgccgtctt cctcactctg tatgaatgga agagtccatt tggtttgact 1680

cccaagggggc gaaatagaag taaagtcttc tccttttctt cagccttgaa catctgttat 1740

gccctcttgt ttggcagaac agtggccatc aaacctccaa aatgttggac tggaaggttt 1800

ctaatgaacc tttgggccat tttctgtatg ttttgccttt ccacatacac ggcaaacttg 1860

gctgctgtca tggtaggtga aagatctat gaagagcttt ctggaataca tgaccccaag 1920

ttacatcatc cttcccaagg attccgcttt ggaactgtcc gagaaagcag tgctgaagat 1980

tatgtgagac aaagtttccc agagatgcat gaatatatga gaaggtacaa tgttccagcc 2040

acccctgatg gagtggagta tctgaagaac aatccagaga aactagacgc cttcatcatg 2100

gacaaagccc ttctggatta tgaagtgtca atagatgctg actgcaaact tctcactgtg 2160

gggaagccat ttgccataga aggatacggc attggcctcc cacccaactc tccattgacc 2220

gccaacatat ccgagctaat cagtcaatac aagtcacatg ggtttatgga tatgctccat 2280

gacaagtggt acagggtggt tccctgtggc aagagaagtt ttgctgtcac ggagactttg 2340

caaatgggca tcaaacactt ctctgggctc tttgtgctgc tgtgcattgg atttggtctg 2400

tccatttttga ccaccattgg tgagcacata gtatacaggc tgctgctacc acgaatcaaa 2460

aacaaatcca agctgcaata ctggctccac accagccaga gattacacag agcaataaat 2520

acatcattta tagaggaaaa gcagcagcat ttcaagacca aacgtgtgga aaagaggtaa 2580

gaagggggcca atggcaactg tctttatatt tgtaaaataa tccttagaga tctaactgta 2640

taattattca gatcaaatca gggcaattta tcaaaagaat cagtataaat agagggaaat 2700

aaaacataaa ataaaaaatg tatatggaca ctaaaatgca gtgtacacaa tatactgtca 2760

tggttagaag tgtagtcatg gactctagga tcaaccctct ggatccaaat cctgtctcca 2820

agacttatga tatgtgttac tttgtgtaag tcacttattt aatctctctg cacctcaagt 2880

tcctcatttg taaagtagag ataaaaacag tacctatttc ctagagttgt tgtaaagatt 2940

aaataagatc atacatgtac atctctgaat gaaaggaaat gcctaataaa tattagctat 3000

tattatgtac aaaatacatg taagaattaa tgaataccgc aggcaattaa ttccatgttt 3060

tactgtcttt ttggcatatt tccactccct actcctttct agcattccta ggaacagagt 3120

attggaaata tgaaacagac atgtcatgcc taattcattt cctggcactt ttctacaaac 3180

tccctagcaa agagcatctt attaatagga aataacaaac attaaatgca ttaatgacat 3240

ctgaaaatcg aagctcttca ctctcaccac accaggctgt ggatgactgt tccctatttc 3300

atggtgacta aagatgtcag aagcacttgg gtctggttcc tggctagtct ctgctgcctg 3360

ctgcctaagg caaccctact gattcttttg tacacccaga ggcctcagat gagggcacac 3420

ctctcatcat aacagaagaa aaagggatgg aaaacaggat tcttttgtt tgtatctttt 3480

ctgggactgc tgcagtcccc ttctatgcag tctccatcta gcttgttgga atcatttcct 3540

ttatctcttg aagtatctct ttccagtcaa tgagcactct cccctcccct ctcagtctgt 3600

ggtattcctg catcatattg caagtctgtt agtgacaagc tgtatactag tccagtcaca 3660

gctgttccat gacatgttac atctatttt tctattttta acataaattt ttaataacag 3720

taacacaaga agacatagca gcaaatgtat catcttacaa tgaaaaaata tttgtttttcc 3780

agctataata gaaacaggaa gcccaatgat cccatctcca actgtgatat gattcatatt 3840

cacatctttc tcacataaat tgaaaaccat ttgtgtcttt tgatgcaact tacccagttt 3900

tcttggcaga ttcccttcct gaaccccta ttttgaggat ctaaggagaa caggtgttca 3960

tggtttagct tgggctcaca tttcctgtgc ctacctctat acaacccaac attagcaacc 4020

tgtcaaacac aatgagtgtt tggcgtacca tagccgtcat gtctctttgg aatagtccag 4080

tggagtattg aacctcagtg ttacataatt gctccaggga agcctatttt acccattttt 4140

agtgttaaat acagctcact cactggtcac gtaacactct aagactgacg aaggcttgaa 4200

tcaaagcaaa gcctaaatgt tactgaggct aggagtataa caccagcctt gggttatttt 4260

ttccaagtag acactgagtc ttacactcag catttgtcac cttgcactca taggtaccca 4320

catcaaatat cagatgcctg gtgatactag caactagaat ttggcacaaa gtccagcatt 4380

tgtttattct tctatattat attaccagat agatatacaa agctctggag aagaccagtc 4440

cagctatctt tacttacctt atcactgtgg ctgtctagac agttgaagaa aatgtgtaga   4500

tgctctactc tcaggttttc cctgctatga aacattgtag ggcattagaa tgctctccct   4560

ctcttctctt ggaagtatat ctatgcaaat gctcatgcat gctacaactt gacatccctc   4620

ctctgtgccc catatttact gaac   4644

<210> 701

<211> 3557

<212> DNA

<213> Homo sapiens

<400> 701

gtactgtact taggacgatg gtgaacaaag aaaagctctt tgcagcgttt gatgaatggg   60

attctgcctc ctataggcca cactccgagt cttccatacg gtacaatctc cggactcggt   120

ggtgttagga aagtggcccc cggaatggct tgcattccgg gtctgggatc ctggggtggg   180

catttgtgcc gtcgccttcg ccgccgcgct cgccttgcag gagcgggtgc agatggagcc   240

aggctgacgg ttgttcaaga ggaacaaatg tttgttcaat tgttggatgg tggagaaaag   300

ggactgtttc ctattgactg ctgcaggagt tggaatggca ttgtttattg gcctgggaag   360

ccaggcaagc gtcttgtgct gcttacaaca tattagcaga cttccaaatg acatgctagc   420

atatgtgttc ccagcagtcc ccaccggctg gcagggagat tcctccttgc tccagatcct   480

ggactcgttt aaaagatgcc acctggtttg aggacttggg aaggaatgga gtcagccgac   540

cagggagttg accacatttg gccatttccc agaagggccc caccccaagg gtgagtggcc   600

aatggggagc tgtttctgct gacatcaatt ccccaggagg tactcacccc aagtctgccc   660

aagtgaagat ggctgatacc caccctggga tggagcccag cgcctgaggc ccttatcatg   720

gtgatggtcc taagtgaaag cctcagcacc cggggagctg actccattgc atgtgggacc   780

ttcagccgtg aactgcacac gccaaagaag atgagtcaag gacctacact tttctcttgt   840

ggaattatgg aaaatgacag atggcgagac ctggacagga aatgccctct tcagattgac   900

caaccgagca ccagcatctg ggaatgcctg cctgaaaagg acagctcact atggcaccgg   960

gaggcagtga ccgcctgcgc tgtgaccagt ctgatcaaag acctcagcat cagcgaccac   1020

aacgggaacc cctcagcacc ccctagcaag cgccagtgcc gctcactgtc cttctccgat   1080

gagatgtcca gttgccggac atcatggagg cccttgggct ccaaagtctg gactcccgtg   1140

gaaaagagac gctgctacag cgggggcagc gtccagcgct attccaacgg cttcagcacc   1200

atgcagagga gttccagctt cagcctccct tcccgggcca acgtgctctc ctcaccctgc   1260

gaccaggcag gactccacca ccgatttgga gggcagccct gccaaggggt gccaggctca   1320

gccccgtgtg gacaggcagg tgacacctgg agccctgacc tgcaccccgt gggaggaggc   1380

cggctggacc tgcagcggtc cctctcttgc tcacatgagc agttttcctt tgtggaatac   1440

tgtcctccct cagccaacag cacacctgcc tcaacaccag agctggcgag acgctccagc   1500

ggcctttccc gcagccgctc ccagccgtgt gtccttaacg acaagaaggt cggtgttaaa   1560

aggcggcgcc ctgaagaagt gcaagagcag aggccttctc tagaccttgc caagatggca   1620

cagaactgtc agaccttcag cagcctcagc tgcctgagcg cagggacaga ggactgcggt   1680

ccccagagcc ccttcgcccg ccacgtcagc aacaccaggg cctggaccgc cctgctctca   1740

gcctccggcc caggggggcag gaccccgct gggaccccgg tccctgagcc tcttcccct   1800

tccttcgacg accacctcgc ctgccaggag gacctgtcct gtgaggagtc agacagctgc   1860

gccctggacg aggattgtgg caggagagcg gagccggctg cagcctggcg ggaccgcggg   1920

gcccctggga acagcctctg ctccctggac ggcgagttgg acattgagca gatagagaag   1980

aactgagggg gtgtgggccc aggcagggct ggggtgtgct ggcatcgaca gcccccactc   2040

tgggcactag gtgggccctt gaaggggagc ccaactcgtg ggcctgatga aagcttcctg   2100

agtggtgtcg ggtcccagag agggagccca cctgctgcct gggggagagc ctggcctggc   2160

cgcgtcatac agcgggtgtg tcagcctctc accggctccc cgagcgtggc agccaccagg   2220

tccacagaac tactgcagcc cagaggacag ctttgaagtt tgcgtctttt ctgcctcttt   2280

ccctgtggga tgttgggcag tctctgttgt ccccggcaga gctgggcacc gctctgtatc   2340

cccctggtgg tgggggctgt cagggagggc ctggggtggg ggccaggggc catctgctat   2400

gtcagggccc ttcttggcct cactcaggtt cacttctggg gagtcggccc cgcagcttct   2460

ttcactcagt tttactccgt gccttctctc ccaggtctcc ctgcttcagg cttgggaagg   2520

ttcgggagat gcttccttct gtaacaccag aaccatttgg ccttaattcc aatgtgagag   2580

acagaatccc tggggtgctg gactggccct ccagagggta agccatgtcc ggagtctcgg   2640

gcccaaggaa cgatttggag ggtgcttgtt agggcctccc gtgttgggta gaaatttggt   2700

ggatctgttg gctgaaaaga cggacttgct tgcctctcct acagcatgga gaggctgacc   2760

ccatggctct gccaccgttg gggcagggtt agcagatggc agcccttctc tgtggctgac 2820

aggtcactga gtgataagca tggttggttc cggtgagtgt agggatggca cgataccagg 2880

gcagcctctt gaaaacggcc tcgggagacg ggagctgcga gcaggtgggc agatgagggc 2940

cctatgcgca ctcaggggtg aagggcgtcc gctggccact ctgcaggggc ccctgcagga 3000

ttccaggcac ctcccgtttg tccttgagga ctgctggctg taaccagggc acatcaccca 3060

cctcaagaca agcccacgcc cttgtcagct tagggggagc ccagtcctga gggctgcatc 3120

tctgttgtag gcccagccac cggcacaaag ctggattcat gctccctgcc cctaccccac 3180

cctggctcct caccctgggg catccgagga gcctagcccc ctgagggttt gctctcctct 3240

caaggtttgt agctcctctc cggctgcctt gcagacacca ccacatgggc tccgctctat 3300

gggaatctgg cttttagcga atgtggcgtc ttctgcaaac aatagcaatt gggctggctt 3360

aggagcaagt ggctcatttt cccataaggc taaaaataac tggtgcgctc ccttgtgttg 3420

gctgacacgc gcgttcaaag cacttttgta gtcactttgc ttttgctcgt cttcatggac 3480

gagtgaacgc ctcgcttctg caggttgagt ccagatgctt ctcaccttct ttctcctcaa 3540

gaaagatgct ttttggg 3557

<210> 702

<211> 5882

<212> DNA

<213> Homo sapiens

<400> 702

cagagagcca ggaagagcaa ccgagcaggc gagagtgtgc agaggggagc aggggctcca 60

gcccagtttt cttcctgatg ctgaacactc aggtcctgtc cagtgctgag ctcagcctcc 120

tcttcaatag aagctggggc acaggcggtc ttcctggttg ttggtctagg ctggatggag 180

ggcccagcca aatttctctc ccctactcac tttgtaaagg aggagggaga taccccagcg 240

cccctgggca ggggctctgc tattgttctc tgtgtcttag agagctcagg cctgtgtgtg 300

cctgtctcct cccaggagat ggactcagat ggccacagca tgggggagtg catgtgcaca 360

agcagccctg tgttgccgtg gacacagccc caggcctgtg tgatgaatgg ttccctgcca 420

```
ggggggaggag ggaggtcttg tcagcccagg ggaccaccca gctactggga gccatggatc    480

ccagggaagc ctggtgtctg cggtcctgca aagccccagg actgggttaa tgttggtttc    540

cacctcggtt gaaaggaact ggccttcagg gtgttcaggt gccagcaggc ctggcctgat    600

aggtgctctg cacacatgag gccctgcggg catgtccact ggacagatga aggctctttg    660

tctggctgaa tacaaccatt tctccatcag ggtactacta cgacctcgat gactcttacg    720

acgagagcga tgaggaggag gtcagggccc acctccgttg cgtggccgag cagccgcccc    780

tcaaactgga cacgtcctct gaggtactgg gctctcctcc ccacggacat gctctgggct    840

gggctctcgt tcctagcgtc cacaccctgc agtccacccc actgttgcta ggttcctccg    900

aagtcctggc gggttcgccc catgaagctc ttctcccacc aggcgcagcc agctacggcc    960

cacacttcga ggaccccagg aggggacccc gggacagtgc aagcatacca ctgccagtgg   1020

cttcaaactc atttgttttc tttcccaatc tagaagctag agttttttgca acttttttggc   1080

ttgaccaccc aacagcagaa ggaggaattg gtggcccaga agcggaggaa gcggcggagg   1140

atgctgcgag agagaagccc gtcgccccca acaattcaga gcaagcggca gacgccttca   1200

ccgagactgg cgctgtctac ccgctatcag ccctgatgag atgaacaaca gtcccaactt   1260

cgaagaaaag aagaagttcc tgaccatctt caacctgacc cacatcagcg ctgagaagag   1320

gaaagaacca gccacgcagc aagcctctct ggatgtggag aagccggttg gtgttgctgc   1380

ttccttgtct gacatcccaa aggccgcgga gcctgggaag ctggaacagg tccggcccca   1440

ggagctgtcg agagtccagg agctagctcc tgccagcggg gagaaggcca ggctgagcga   1500

ggcccctgga ggcaaaaaga gtctgagcat gcttcactat atccggggcg ctgcacccaa   1560

ggacattcct gtgccgctgt cccacagcac caatgggaag agcaagccgt gggagccctt   1620

tgtggcagaa gagtttgcac atcagttcca cgagtcagtg ctgcagtcca cccagaaggc   1680

cctgcagaag cataaaggga gcgtggctgt gctgtctgca gagcagaacc acaaggttga   1740

cacgtccgtc cactacaata ttcctgagct gcagtcctcc agccgcgccc ctccacccca   1800

gcacaatggg cagcaggagc cccccactgc aaggaagggc cccccaaccc aggagttgga   1860

ccgggactcg gaggaggagg aagaggagga tgatgaagat ggagaagatg aggaggaagt   1920

ccccaagcgc aagtggcaag ggatcgaggc cgttttttgaa gcttaccagg aacacataga   1980

agagcaaaat ctggagcggc aggtgttaca gacacaatgt agacgactgg aggcccggca   2040

ctacagcctc agcctgacgg cagagcagct ctcccacagc gtggcggagt tgaggagcca   2100

gaaacagaag atggtctcag aacgggagcg gctccaggca gaactggacc acttacgaaa   2160
```

gtgccttgcc ttgcctgcaa tgcactggcc taggggctac ctgaagggat atcccaggtg 2220

acggtttccc ttgcactagg ccgaacctat agtatagaaa tattatctat tttattacct 2280

tggatattta atatttttca ctgggaggtt tgaagcttac aaaatgagaa tgtgccatgc 2340

atgaagcaaa ggattccagg ctccagaaaa aatgaatgaa ctcaccttga cgtcaatgca 2400

attgaatcac cgttgtcatt cagcgagcaa ccaatgtagg attgcccaca gtttttcttt 2460

ttaaaggtgg ttttcgccct tcctctccca cattaatctg aacatgaagg ctccattagc 2520

aacactaaaa cttgatcatt aacagccccc tgtgcatatg agtggatcaa accggttctg 2580

ttctttcttg tgttgccatg ttactatgcc tcaagcccag tttgcttttg ccacagcgat 2640

ggggccagtc tcattcctcc ccaggagtga aacttgcttc agctgaaaag gttgggtgca 2700

tcgtcagtaa aaagggctta tttgtttcat tttactttcc tgcaaaattt tcttcaaagc 2760

aacaagtcct aggagcacac aaagcaaccc aaaggctttt ccctggaaaa gctctttctt 2820

acctaaagat aaaaccaatt cacaaactga aggtagcttt ttattactcc gtggggagca 2880

tgtacagagc tctgtgtata cacagcttca cacccaccag attgttacta cagtgggttg 2940

ggttttcata cagacgtaaa ttttgagaga aaagtcaaag gtgcttcagc cttgtactgt 3000

gtatatatat taaaaaaaaa acaaagtttt gtatgttttt attactttaa ctattgttat 3060

aaaaagcctg ccatttttaa tatgtggttt gggggatttt tgtttgtttt tcctgtttgg 3120

gggttttgtt tgttgttttg gttttttttg ggcaaaaaaa aaaaaaaacc ttgcttttag 3180

tgtttgtact gctgctggtc aggacattaa aatattgaag tgtttttaaa aattaaagaa 3240

gaagaaaagt aaaagagctt accactggcg cctatgcgat cacttcattt ttagtttgag 3300

ttgcaccaga agctgccgta gaaagccatg cgctactgct tacctcctcc actccccctg 3360

cctgccccca gcatctggac aagctaatag caaatattac ccattgctat caagggagga 3420

gggggtagtc tgtagaaccc atgtgtgaca gtcatgtgca cacatgggcg ggggcttttta 3480

aaaacctttc aggaagtcaa tgatttctgt gattgatata attctaaggt gtctgagagc 3540

aggtacagaa taggaacttc agaggctttg tttaaacgca aagctttgta aaagccacaa 3600

ggtctgagct gaacccctcc tttttgaact tactgtgaca agcacaggaa cggtcagaaa 3660

ctgggctcat cacaccaagg caaagcaacg ggcgagtctt cctccttgtc ctagttactg 3720

cctatggagg cagtgtttag atcaagaagg cctctcttgc tcccaagggc cctcaccaga 3780

ggccagggct gccagtcact ggtctggggg gtggaggcct gagctgaggg cagggtgcct 3840

gacctgtgtg ccggctgctc actgctgtga ccagcagccg agcccttggc cctagcccctt 3900

```
gctgcgcaga acagcttgct ggcagctggc atcgtgtcgc tttatctgcc cccgcacagt 3960

ttgctttgta cgtctgccaa gaatcttcca gttattagca aactcagacg aatgtaccgc 4020

cagtattatc agcagtcaac aagcaccttc ctctccacag aagcagctgg aagagaactc 4080

gaggggctgt gctgcaggcc tcccctcgaa agacactggg aggtcagcat gttccacagg 4140

tgttcagagg gagtctgcta caaactatca gggcaaaatc tcactggatt tctccactga 4200

aaacctactt gaggtttctg gtctgaaggc ttaagagtca catcttagca cttccgctct 4260

caggcctcct cctccatcac agatgtctgg atgcttttgg aaatggcctt ggctaaagta 4320

aaagggaaaa gtagatccga taacttaaaa acgtagctca tcccttacca tccaaggggc 4380

actcccttgg ttggattttc tatgacagca caggggacag gtggcacacc atgagaggtc 4440

tgcccagggt gggagcagtg tcactgtgct agcaatagtt ggcttctccc ctgtcagtgg 4500

aaaccccact tctgcccggc ccttgagctt cttgcccact gtctccccat ccttccacct 4560

acttgtggcg atctgagtac tctactcttg ctcaagaagt aatacgacaa tcagaataca 4620

aaccagtaag gcaacacgaa taaactaaga aaaaggtaag aactgtctca aaaacgaaag 4680

cacaccaccc aagacacagt acccagtcat ggtttcccca tccaactatt agattcatac 4740

tttgaaaact tactttcaga ttattctcaa agaacacagt agcacctaaa tctgttttca 4800

attgggctta aaaattgaca tgcaatctct taagtaagtt ttttgttcag ctacttcaca 4860

ctgagtacct caaatctgct ctggagtcga ttatgccacc tgtgtgtcag gatgcacatg 4920

aaagccctcg gctcggtcct tagaccatct tcctacatta cctggaaggg agctgccatc 4980

tgtccctctg cagagggata ccttccaata gtaaattatc tggttcctca ctgaaacaag 5040

ttatttttgc ttcatatagt cagagtcaga ctgacatgat aaaatatcat gttcctaatc 5100

tgttgtctca gataagtgac caagacggga ctttccacat tttagtctac attctaatct 5160

taaaggaata aagcactgaa ttgggactaa cattctgata ggttgcaccc ttaagagtat 5220

tcagagagca tcaaaaggag cccacacctt cagcagtgaa ggattctaac acagggaatc 5280

tgcagtttgt agcagaatgg tattttcctc aagtagctca taatactgcc aaatctcaaa 5340

agttaagctg aatttcacac cagatcctac ccctttccct gagccacgtg tttcacacaa 5400

gtgtagaaaa tgccagggat ccaccacaag atggagatgg tcagcacaaa ccgattctgt 5460

tcctctttaa agtgtatatt agccacttag caatctctat attctttcaa gtaaccaagc 5520

tgttgacttt cttactactt gcagtagcct gtccccaact tttccatcca gtgcttaacc 5580

taaaaaactc cttaactctg ccttgacctg aggaagacca tgctaactgg tgttattttg 5640
```

```
tatgtaccct gtgcttaatt ctataacagt aaaccccata cacaggtggg agggaggaac  5700
accggtgcct cggtcactct gggggcagtt tagatgctgt gaaattaaac ctgttctaag  5760
tgtacttgtt tgaattaatt gtattgtaat attatttgtt gaatgtagta attaggtatt  5820
tatgaatata ttgctgtaat ttctgacaac atccaaaaaa taaaatcttc ctaaattatg  5880
tt                                                                  5882
```

<210> 703

<211> 4599

<212> DNA

<213> Homo sapiens

<400> 703

```
gttttcttct agtatgttta taacatacta cctcttacat ttaggtcttt gattcgtttt   60
gcattaattt ttgtatatgg tatattagtc cattttcact actgataaag acatacctaa  120
gactgggcaa tttacagaag aggtttaatt gtagttacaa ctccacatgg caggggaagc  180
ctcacaatca tggcagaagg caaggaggag caagtcacgt cttacatgaa tggcagcagg  240
caaaagagag aaactgtgca gggaaactcc catttttaaa accatcagat ctcatgagac  300
ccattcacta ccacaagaac ggcacaggaa agacctgccc ccatgattca gtcatctacc  360
actgggtcct tcccacaaca catgggaatt atgggagcta ccagatgaga tttgggtggg  420
gacaaagagt caaaccatat cagtgtgagg tcagggtcca aggtcatcct tttgcatgtt  480
gttctccagt tgtcccagga ccatttgttg aaaagaactt tcctctattt gctgcattct  540
ttctttcttt gctgcctaga gcctttccct gcccttcgcc cttctgttac tcgtatttta  600
agtcaagtct cagctcagcg gttacccctt ctaagaggct atccctgatc gtccctctgt  660
gtgtgtgaga gagccccctc atgccttaat cctgatgttt atcattgtag gatttcagct  720
gttcatcttc cccacttgtt ttccaggcca ggtcttggga gacaggggct gtgtgcttaa  780
catcttacat tacttaatat gcacttacat atattcaact tcaggggggaa ggggagatag  840
tacttgaatc acagtgtaat cttccattac ctgtgaactc tagattgtac agaaaatccg  900
gttataactt gtaattcttt gagtacatca gtaatgcacc ttaggtttaa tgtgaggaac  960
```

```
aggactgata gttctcttca acctaaacat ccactggtag acagggaaaa gcccagcacc   1020

cgctccctgc cccttctccc tgaaccatgg aatgtaagtc ctttcattag gctactgggc   1080

caatttttag acctaagctc atggctggac caatagtagc cttcatagat gccaatgccc   1140

ttccttgatg ggcttcagtg aggactcctg accaatcact gacgaggggg gttgggagga   1200

cttctgatgg gggagttggc ctccctggtc ctacacctac ctgcctggag aaggagccaa   1260

agccacttaa gcaaaactga gcagcagccc acagtgtcca tctaccatgt caccccagtg   1320

ctgagcgatt tctaaaaggt tacttttttc aattatttaa aaaaaacacc aaaaattcaa   1380

gtaatacgga aataagtaaa ggagaaagtc ccctgtaatt tttcatagag aaagaggaag   1440

gaatgggggg cagctgtgta agtcaaacat gtttgtaaaa ctccgtgagt ttgaaactag   1500

taaaatagaa agtgaaagcc tgctataatt atggtggaat tgagggtgtc ttattgtgtt   1560

actagagaat ttttttaag taggttttta acattttgac cttgttaaaa tgctccactt   1620

ttcaaaacgg tcctgacagg atatcctgct ccttccacg cagaagaggt ggtttgtgca   1680

gaagtgcagg cctcagaatg ctttgcacat gagaggaatg gcaagagttg cctatcactg   1740

aggatttggg gaggagggat cacaggatat gggactgaaa atgagacagg gccagatagc   1800

aaaaggcctt gaatgctaca ctaagcacga agcagctcct taatttgtgc atcactgaag   1860

caagaataga gtggaggaca tggcccgtgt ggtcctcgtg ttctgagtgg ctatgacatg   1920

gagttctgtg tgagctctcc atgaagaaaa tcccgtctcc aggcagtcag tggagatttg   1980

atccttacca caagagcacg tggacaaatt tgaattatcg tggatgtata tgggcagaag   2040

aaggtctcag agccataagg gtggggccct gttagctctg ttggttccac tcagcagccc   2100

acagtgtgag tgggaccctg ccagccctgc tagacttgag cattgtctgg tgacgctggt   2160

ccccgccttc attactgcag cagaggaagt gtggctgtgg cagttgtggg ttttgtattt   2220

tctatttaaa tatgtccctt aatgtgccag ttgttaaaaa gactaccagt gggctctgaa   2280

gggatgcctg gacactttga aagtgtggtt cagatgtgaa attgcactca aaagatgttt   2340

taagagagac gagggcacgt tgatgtcagt ttcggtttgg gctgtgtagt agcagcattt   2400

tgaacttggc cctctctcct ttctgagagc taaagacctt atctccctgc ggatggcatt   2460

gcgtgcagtt aattatggcc agatggactc agccgcttct tcatcgtctt ctctcggact   2520

ctgcagacct acaccgtgcc tttaaaggaa gcagggccct ccctgctgaa gcattcagtg   2580

agcccaggca ccagcatctt caaaccgagt cttttctctc cttagtgctg ctccccgctt   2640

tccaggcctt cctgggatat cttagagaga gctcagaaat atgctcagca agtcttgcag   2700
```

aaggaatgtc gtcccaagtt tgccaagaca tcaatggcgc tgttatttga gcacaggtat 2760

agcgtggact tactcccttt cgtgcagaag gcccccaaag acagtgaagc tgagtccaag 2820

tacgatcctc cttttgggtt ccggaagttc tccagtaaag tccagaccct cttggaactc 2880

ttgccagagc acgacctccc tgaacacttg aaagccaaga cctgtcggcg ctgtgtggtt 2940

attggaagcg gaggaatact gcacggatta gaactgggcc acaccctgaa ccagttcgat 3000

gttgtgataa ggttaaacag tgcaccagtt gagggatatt cagaacatgt tggaaataaa 3060

actactataa ggatgactta tccagagggc gcaccactgt ctgaccttga atattattcc 3120

aatgacttat ttgttgctgt tttatttaag agtgttgatt tcaactggct tcaagcaatg 3180

gtaaaaaagg aaaccctgcc attctgggta cgactcttct tttggaagca ggtggcagaa 3240

aaaatcccac tgcagccaaa acatttcagg attttgaatc cagttatcat caaagagact 3300

gcctttgaca tccttcagta ctcagagcct cagtcaaggt tctggggccg agataagaac 3360

gtccccacaa tcggtgtcat tgccgttgtc ttagccacac atctgtgcga tgaagtcagt 3420

ttggcgggtt ttggatatga cctcaatcaa cccagaacac ctttgcacta cttcgacagt 3480

caatgcatgg ctgctatgaa ctttcagacc atgcataatg tgacaacgga aaccaagttc 3540

ctcttaaagc tggtcaaaga gggagtggtg aaagatctca gtggaggcat tgatcgtgaa 3600

ttttgaacac agaaaacctc agttgaaaat gcaactctaa ctctgagagc tgttttttgac 3660

agccttcttg atgtatttct ccatcctgca gatactttga agtgcagctc atgttttttaa 3720

cttttaattt aaaaacacaa aaaaaatttt agctcttccc actttttttt tcctatttat 3780

ttgaggtcag tgtttgtttt tgcacaccat tttgtaaatg aaacttaaga attgaattgg 3840

aaagacttct caaagagaat tgtatgtaac gatgctgtat tgatttttaa gaaagtaatt 3900

taatttgtaa aacttctgct cgtttacact gcacattgaa tacaggtaac taattggaag 3960

gagaggggag gtcactcttt tgatggtggc cctgaacctc attctggttc cctgctgcgc 4020

tgcttggtgt gacccacgga ggatccactc ccaggatgac gtgctccgta gctctgctgc 4080

tgatactggg tctgcgatgc agcggcgtga ggcctgggct ggttggagaa ggtcacaacc 4140

cttctctgtt ggtctgcctt ctgctgaaag actcgagaac caaccaggga agctgtcctg 4200

gaggtccctg gtcggagagg acatagaat ctgtgacctc tgacaactgt gaagccaccc 4260

tgggctacag aaaccacagt cttcccagca attattacaa ttcttgaatt ccttggggat 4320

tttttactgc cctttcaaag cacttaagtg ttagatctaa cgtgttccag tgtctgtctg 4380

aggtgactta aaaaatcaga acaaaacttc tattatccag agtcatggga gagtacaccc 4440

tttccaggaa taatgttttg ggaaacactg aaatgaaatc ttcccagtat tataaattgt   4500

gtatttaaaa aaaagaaact tttctgaatg cctacctggc ggtgtatacc aggcagtgtg   4560

ccagtttaaa aagatgaaaa agaataaaaa cttttgagg   4599

<210> 704

<211> 3932

<212> DNA

<213> Homo sapiens

<400> 704

ctttctgctt tttttctcgc tcactcaccc gctggagtgc agtagtgcag cctccacctc   60

ccgggctcca gtgatcctcc tgccttagcc tctcaaagtg ctgggaccac aggtgcgagg   120

caccatgccc ggcctgttct tttctctctg ccctttttttg tattttttcc tttctccttt   180

ccttcttccc taatgtctgt ctctctcctt cccttcttaa cttcccttct ctctccagcc   240

ctctcctacc ctccttttct cttttcccct atctccagcc ctctcctacc ctccttccct   300

ccctctttct ctctccccct ccgcaccgct ccatctccct ctcggtccag tccgctgtct   360

gtgccccctc tctgttccgt tttctctccc acccttcttc cctctcccat ttcttctctt   420

ttcccctctt cctgttctct ttttctcgct gtcctctctg tggccaccct cctttttctc   480

acttctgctc tccctgtccg gctcttctct ctcctctctc ccttctagca gattctctgg   540

ctgtttcctc tcctctccct ctgtgctcct ccctcctcct ctctcctccc agccactatc   600

ctctctcttc accctcttct ctttctgtct catggtctcc tcctagctct tttccttccc   660

agttcctagc tctctccttt ctctttcctc ttctctggct ggagctcccc gctcctccat   720

ccctccctct cccgggggccc cctctccccc accctcttct cccccaacac cctctccccc   780

acccacttct ccctaggacg ctccctcctt cacccgtttc tctgcttccc tcttctccga   840

gctcaccagc catggcaccc accctctccc tctcttcctt cctgtcccag gccctgggta   900

gtgaaaggag aaggtagtcg aggcagtcaa gggtgacccc acacgcagga ggcacgccac   960

accagatcac gccacacgca ggctgctccc aactggcagg gcctgaccca gccaggaagg   1020

gccaggtcct aagattccac agtgccagga gtgcccgaag gggccaggtc ccaggattcc   1080

cacagcccca ggtatgcctg gaagacccgg gtcccaggat tcccacagcc ccagctatgc 1140

ttggggggggc cgggtcccag gattcccaca gccccaggtg tgcctggaag acccgggtcc 1200

caggattccc acagccccaa gagttcccgg aagagctggg tcccaggatt cccacagccc 1260

cagctatgct tggggggggcc gggtcccagg attcccacag ccccaggtgt gcctggaaga 1320

cccaggtccc aggattccca gcccctggga tgtgcctgga ggggctgtgc cacctctgca 1380

gagatggaag ggctggtgtt gaagcctgag gatttcgccc tcaggtccag gtcagaacat 1440

cccagcacca ctttcaggcc acgtctgccc tgcagttttg accactgaat tggtcttaag 1500

agtggccacc cattcccctc caagtgaggg ggcaagacac aagtagggga cgggtcactt 1560

tctgtcaccc tgaaaatacg ctgggcacga cacaagtagg ggatgggtca ctttctgtca 1620

ccctgaaaat acgctgggca cgacacaagg ggggctgatg aagtcaggcc cgcccctcca 1680

agtccacctc gaaatcaccg tctggcttcc ccgcacttcc caccacctga caccgccaag 1740

ccccttgctt cagattttct gtggtctgta ttcataccct tgcttcagat tttctgtagt 1800

ctatattcat gcctgcttag gcccctacaa aagtcctcat aaaaccagca ccacctttat 1860

ctgcctccaa aacacacact gctttcccat caggaagatc agcaatgtgg tttccggcct 1920

ggttcttagt caaaaagtta gtgtctggtg gtttctggcc tttttgcagg acggggcgca 1980

gggaacggct gcacggccag gcagcctccg ctgtccacct ccagccccgg ttttgcagcc 2040

gtgtgtgata tcaagggata gagttagggt ttctgtgggt tttgtttttg ctgaggaaag 2100

gatgtgcagg tcgatagcta ttgtttcctt tccattcctg tgattctctt tacatctgta 2160

tatatctatc acaccatgct gactttgtga tgagtcctgt tcctcagaaa catcaagctg 2220

ggttcctttt caaagaaaca cacagatcat atttctccat ctcattttgt tttcacaggg 2280

agcttttctt atcaacaaag tcgcatgctt ttttttttgg atataatgtt tatcacgtct 2340

ggagagccat aaacagtaaa tacagaggat atcaatgccc agaatagtta gagtattttg 2400

atgaaatcct attttttagat aataaatttc aagatgtgtc tatagtgtat tgtttaaaac 2460

aactgaagac atttgagacg tacataaagt agacattttt aatttaggga aacttatatg 2520

ccctttttta agaagccatt ctaataaaat aatctgacta attggcccaa aatacaataa 2580

gtatcacttt ctaacagaga ccaaagggaa gctgagaggc tttccttttta tgtactaccg 2640

ttggatcgct gcagccgcct ctcataacac ccaacagaac ccggtgaggc tctgtgggct 2700

tcccgcggcc ctcagggagg ctgcagagtc ccctagtcca tgtcagggag ccgccatccc 2760

acatacctcc aaagcctgtc ctcgcctgca gtttttgcag agctcgcggt tggaggtgga 2820

```
aatttagaag ccctgtgttg caggagaggc agtagcaccc ccaggcagct cttagcaggg   2880

acagaccacc cgccgcctcg ctggtatttt agggtctttt ggtattttgc cactgtgtgg   2940

ggctaggcgg gtggctggag dacacggtgt aggccttgcc gctgtctggg ttcctcgcca   3000

ctgcaggagc aggactgttt ctggaaacac tgggctgctg gtgacccgtc aaacttctcc   3060

cacaaattct gaatccgaga aagtgaagga aggatggtgg ggaagtgagg aggcaggagc   3120

agaggccaca gggaccgacc agagatgcgg tggagacaga ggagcttcct tctcaggctg   3180

tttctgggaa gcctgagagg cggccagcac caccctccgc tcactctccc ctcagcctct   3240

tcgcttccct tctcaaccct ttctctcctc ctcgcctctt ccctttcttg ctgtcttgtt   3300

agtccctgtc ccaaaactcc tggctccttt gttctgctgc cgtggccccc acccaggagg   3360

aggtctcagg caccattccc cccacgaggg atccacacaa caggttcatg ctggggctgg   3420

gggagccccg ctgggttcct gatgccttgt gcacagggag ttgctgcagt cattttggga   3480

ctctcctgaa tgtgtccaca tgttctgacc tcccaccaga aggaacgctg gtggccacat   3540

ctctagagat ctatttactt ttttgagacc ggcttatgag attggctaat ttttgtattt   3600

ttggtagaga tggggtctca ccatgttgcc caggctagtc tcgaactcct ggcctcaagt   3660

gatctgccca ccccggcctc ccagagtgct gggattacag gcatgagcca ccgcgctggc   3720

ctctagagat taacaccaaa caatatcact cctgcgggaa ccgcagacag atcaaaccct   3780

ggtgagagga acactttatt tcccaactca tcatcctaag ccaaggttgg agggatgagc   3840

attccctaaa caccaaggcg agatcacctg gtcccagtgc ctcttttcac acaggcccta   3900

gatttctatc tctctgcagt ttatgcatcg gt                                 3932
```

<210> 705

<211> 4395

<212> DNA

<213> Homo sapiens

<400> 705

```
aatgcccagt acaaggttga caccgcgggc cccaggttgc cattctctat attttccttc   60

ctttgtccta tttggtttct gaagttaaat ggtctctttt ttgatatgaa aattaatttc   120
```

```
tggacaaaaa gaaatatgcc tgcacagggg ccaaatttgt gttgtctccc agcacggctg    180

taattacact gtagatcaaa ctgacgcctt agttttcagt ggcttttttc cctctccgat    240

gtccctgaag ttgccaggct caccaagagc agcagttttc attagcagca aagccagggg    300

atggggatgg atggccgggg ccagccctca ctcctgggtt tctctcctca aattcttctt    360

ttggatggac atgtgcaatc caggccaatg cagagaactg caggactcag ggtcctgagt    420

tgcttgccac agtgtggggg tgaatggcgg tggctctggg gtacccctca tcctatgggt    480

ttcaccctgt ggaacaggca ctaccaggct tctcttttaa gtgtcagaca caagaagggt    540

ctcacacatt tcccatggtc tctacacatt tcccattacc tttgtgccca gcagaaatct    600

gtgttcacct gctaaaaatg gtcactgtga attagtatca agctaagaac ttgtgaaata    660

gggcagaacc aatgcaaaat tttccggagt catgaaagtg aagtggcttt tacactgcat    720

tcaatattgt gagttctaga ggaattttca gggaaactgt ggctcccttc ttatcctaac    780

tttcatagtc aattctcgat tgcccataca tagctccact attgtttgtt gggtataatt    840

agacactatg ttctgtggcc ctcaggtgga catctatgct ttgccaataa gccatgaatt    900

actccccaga gaagcttatg tgattttgac atctacaagg tgaatgcaaa ctatttattc    960

acaatgtgat gggcattcct tcaatttccc tataatatgt tgaatgtaaa tgatttgtac   1020

gtggagagag gagtgcttgg tcagacttca tatgtcagaa agtcaacctg ggtggtgtga   1080

acaactcccg tcaaatgagt caaagcccca gaatgagatt ctatggtctc ttggattgaa   1140

cttggggcca agggatgtgg gctttgatcc ctgcagcttt gtcactggcc ctgagtggcc   1200

attcatctaa tttttccatc tgccaagtga agcaacaatc cctcccactg ccaagcttac   1260

agtcacatta taaagatgat tgagattcca tgcctcagtg gacttcagga ggaaaagtgt   1320

taccctctaa atccttcctc acactcccac acccacaagt tttctttttt ttttttttaaa   1380

gagtccagtg ttaatagtgt tttgactgct ttcaagatat caaaacagct tttgttggaa   1440

tgaaataaac aaaagaagat gggtttttgga acagagcatt ttaaggttca aatttcaact   1500

ttatcacgta tgagtattat aagtcagtta ctcacactct tggaacttta ttttcctcat   1560

ctgaaaagtg aggacaataa tggctccctt gaaaggccgc agggataatg agctgccatt   1620

attgcatcag tgcaattcca gcatagtgag aaaggtttgt gtctcttagc tgctttctga   1680

ccggatggca agcctctcct caccccacac tggccgccgt tggcatacct atgtgcatgc   1740

tctgtcctcc gcggttcctg tggagaactc taaaagtcag ggaagctcag tgccacgttt   1800

tggaacttgt cagccataga gcaacctacc tatttacttc cagtggatga atgggaaggt   1860
```

●

```
attgctgtat cacataagga ctctcctagg gagggcagtg ttagcagcat gaaaagaggg 1920

acattccagt gtcacacaaa gtcccagatg ggaaacggca gttgccaaag gcagcctgaa 1980

gtgctgcgtt ctcttcgctc ttcaaatgca gacaggtcta tagcagcagc ttgaagatga 2040

agaccctgga aaaccatgag caaggggggcc tcaaaatgac agggaaacac caacaatgag 2100

gagggagcta aacgcacagt ctcttacacc caggagtgtg attatctgac attttggttt 2160

aatgaaaaaa tcaatagttt tggagccaag cgtgggtttg aagcttcgct ctgacacttt 2220

actgcgcaga ttgctgagta agttactttg gtcaccgact ctcagttttc ttatttacaa 2280

tactgggata atgcctcact cgcagggctg atgaatgaga tcacagtggt gtggtggaaa 2340

gcatgggcta cgttgtaaga gtgtattcaa ttcccagcct cactggttac acttctgggt 2400
```

●

```
ctttaggaga gctgccggca tccatgtgcc tcgatttcca cattgtaaaa taagggtaat 2460

aactgttgcc tgtctcaagg ggtgttgtga gggttatgta tggagcacat aaggagtcta 2520

aggtgcacaa aatgaatact cacaatgaac gctcaacaaa tagttccatt tttaaattaa 2580

taaatggctg ttagtaatat tattattta ttagttttag cttattatcc acaaaatagt 2640

tcttacctac taattggaca agggtaggac actaattaaa cgatgtgtgt catttttgat 2700

ggctcacact aaaatccata gaaaagtgtt tattttcttc aattttttt cttgactctg 2760

gggtttctgt ccttctaatc catgagtctc tctctgtctc tgtctggggt ttctgtcctt 2820

ctaatccatg agtctctctc tgtctctgtc tgtctccttc tttcctctcc atgcagtaaa 2880

acagagctgc aggcagtcaa tttcgagtca gtgggctgtg aaaagcagtt agaataatag 2940

tttattgacc ctgaatgtgg cagctggaac tgagggtcgg ctgggctcag gcacagtgta 3000
```

●

```
atggtcacaa tagaagtttg atcatctttg atcatttcct tggactttaa gagagaaggt 3060

gttgccaggc atggtggctc gcgcctgtgg tcccagcact ttgggaggcc gaggcgtaca 3120

gatcacaggt caggagtttc agactggccc gaccaacatg gtaaaacccc gtctctgcta 3180

aaactggaaa aattgaccgg gcatggtggc aggtgcctgt ggtcccagct acttgggagg 3240

ctgaggcagg agagttgttt ggacccggga ggcggaggct gcagtgagaa gagattgcac 3300

cactgcactc cagcctgggc aacagagcaa gaccccgttg agagagagag agagagagag 3360

agagagagag agagagagag agatgttttt tggagcctgg gagcacctcc aaatagccca 3420

agtccagggg cggtagccta cccagaaggg gctgggtttg gttggaagga gataagtgga 3480

ggagggcagg atgagggcct gagttctgta ccacttgtgg gagtggagcc ttcatcactg 3540

ggggtctgag tgcctgagca cgagggatgc tgatccccat ttcaaatgtg tcccaagcat 3600
```

agacatgcgc tctgttttct cagattacct ttggaagctg gacttttctc ctaagcactg 3660

cagtgatatg ccttcttatt cactctggtg atcatggatt ttccggtaga aatgtaatta 3720

taaataaaaa gtacatcttc aaactacttt aatacttcca tattagaagc aatttgtttg 3780

taagtggaat tattaataaa aacatagttg aaagcagaga ctaaggaaat tcaaagagaa 3840

agaggagaac atgaatatat aaataaagga tggcctatat ttttacataa tttgtgaatt 3900

aaaaaataga aatgtattgt catagactgt ataaactcat gcttccttcg atagctcagc 3960

tggtagagca gaggactgtc gaagacacgg aatcaaccta aacgtccatc agtggtagat 4020

tggataaaga aaatgtggta catacgcacc atagaatact atgtagccat aataaggact 4080

gagatcatgt cctttgccgg accatcaatg gagctggagg ccattatcct tagcaagcta 4140

acacaggaac agaaaaccaa ataccgcatg ttttcacgta tgagtaggag ctaaatgatg 4200

agaacacaga gacacagaag agaacaacac acactggggc ctattggagg gtggaggctg 4260

ggaggtgggt gaggaccagg aaaaataact aatggatacc aggcttaata cctgggtgtt 4320

gaagtaatct gtacaaccaa tccccatgac acaagtttac ctatgtaaca gagctgtgca 4380

tgcacccctg aactt 4395

<210> 706

<211> 4876

<212> DNA

<213> Homo sapiens

<400> 706

ttgtacagta aatgtaattc agctgtggtc cccacgtttt gctgtgtctg gtggggtggg 60

tccggcagtg gcggtgcccc gtgccagggg ccagtgctgc ttcatacccg gcaaactgac 120

ctctggcctt tgttttgcct gctgttccct gcgctgaccg ggctgacctg ccgcggttgg 180

ctgggttcgc ctcaaagtga gggctggagc tgggctggag cagctgggcc tggtcacggc 240

cattctcctc ttcccggtgg atggaatccc agctgggctg tgctgagccc tcgctcacag 300

tccccggcag cagatggcct ggggcggact gtccccaaca gcagcaggac tccagagggc 360

caggtcctcc agtcagtcgg cccgctcagc agagccgcct gcacgctggc caatctggtg 420

tctgctatgc ccggcccagg ggggtgtgga cgccccggag gtcacagctg agctggaacg   480

gggcactcca gttggtacag ggaccagacc acagcctctg gctcaggtgc ctccctgtgc   540

tgtttcgtgg gcatgtccgg gccttaagcc cctccctggc agctccagcc cagccgcctg   600

ctgctgggtc tggcctagct accccaccc ccacgctatc agggcccacc cccagtctca   660

ttgtagagca gggactggcg cctggagccg tctccgggtc tcattctgac cagaccaggc   720

tcctgttacc ctgcctcctg ggtcagaggt cagacacagg gtcaggggga cactcccatc   780

cggtctcaag agaaccactc cctgaggccc cagacatctg gagccacaga gggtttggaa   840

gggtagattc caggcagcct tttgtcctgc tgcaccaggc aggccagccc cctgccctcc   900

ccaacgaaga ggagccagcc tggggatgtg tgccccgccg acggggggct ggggcagggc   960

aaggctctgg tgccctggga cactcgctct tttcagctgc agacgccctt gcacttggcc   1020

ttccctcggg cggtgccatc ccacgcggag ccacgtccag ggctacacgg tgcgtgggcc   1080

gaggctccgg catcagcgtt tcgggctgtt cttatgcttg tggtggccac aggcctcttc   1140

ctgctgcacc tgccccgcct tggggacagg cctgaccccc aagcccgctg cctggtttca   1200

gggatggggt ctctgggaat gcagtcctgc cgggttgggc cccactccaa caggggcagc   1260

agagcagagg aggccggctg tgctgggcgt cctgcagacc cctgtgcccc tgaaacagcc   1320

atggaggggg gaaggaacct cggagcggag tgaagccctc ggccgcacgt gaccgttgcc   1380

agcctggacc tggcccgggg gacccaggct gtggtcagcc acgctctgcg gggagggccc   1440

gtgcctgcca cccccatggc ataggagcct ggggtccaga gggcgccggg gacaaaagct   1500

gggatctgct ggccctgccc ccaccctact gagggtcgtc aaggagattg atctcagccc   1560

aggggtggac gaaggggttc aggttacagg gtcccctccc ctccccctct ccagccagag   1620

ccagcccttc cccgccccgg tgaccctcat ggccagtggc tctgtgctca tgggcctctg   1680

gcccctcccc aacctcctcc cctctgccct gtgctgacca gggcctggga gccccgcac   1740

ggttcagaca gaggggccag gctgaagctg gagaggaacc agcgtcacac agacggcctc   1800

tgagaacttg gagaccccgt tacccaccca gcaggggtgt caggacaagc atctgctgca   1860

ggcttcagcc tcaggggcaa aagggagccc cggggtcctg gtgggggcac cgaccacagg   1920

cccggagggt ggatgcctgc aggaagctgg gctctgtgga gcccgaggag gggctggtgg   1980

ccacacccc cggccccctg gctcggcggc cctcatgccc gccctacgtc cactcctgcc   2040

gctcctgctc ctcctccggc tgacctcggg ggctggcttg ttgccagggc tggggagcca   2100

cccgggcgtg tgccccaacc agctcagccc caacctgtgg gtggacgccc agagcacctg   2160

●

```
tgagcgcgag tgtagcaggg accaggtgag tgtggtcggg ccggggtcct ggggctcaga  2220

gcagccagcc tgggcaagac cctgctggag gtgccacctt ctgcctgggc tccccagact  2280

tctggggggt ctgggtctgg gccccttaag gggcccagag acacccccat cgttgccctc  2340

atttgtctta agaataagag ccctccccac tccagctttc atgctcccca tgtgcctcca  2400

ccctgggcac catcatcctc ggcgaccacc cccaccccgt cactgcctct cctcccaccc  2460

tctcctccca ccctctcctc ccatccactt ctcccacccc ttcactgcct ctccttccat  2520

cctctcctcc caccctctcc tcccatccac tcctcccatc cacttcttcc atcctcttct  2580

cccaccccgt aactgcctct ccttccatcc tctcctatcc actcctccca tccacttctt  2640

ccatcctctt ctcccacccc atcactgcct ctccttccat cctctcctat ccactcctcc  2700

catccacttt ttccatcctc ttctctcacc ccgtcattgc ctctccttcc atcctctcct  2760

cccatccact tctcccaccc cttcactgcc tctcctccca ccctctcctc ccatccactc  2820

ctcccatcca ctcctcccat ccacttcttc catcctcttc tcccaccccg tcactgcctc  2880

tccttccatc ctctcctccc accctctcct tccatcctct cctcccaccc tctccttcca  2940

tccactgtcc tccctgtcct cccaccctcc ttccatccgg gaccagtgca gatggtggtg  3000

ggggtgctgc agccgatgtc cagcctttgt cctggcccgc accacctgct gggtggtcct  3060

gagcactgta cgccctcctt gggcctcagt ttcctcgtct gtacaacgta aagaataacg  3120

gaacttgctt gtgggtgtga ggattctgga aggtaagcca ggtggcacct ctggcgaggt  3180

ggctcctcac actggatgga aaggacactg agtccccggg gaggcagcca cagagcggga  3240

ggctccctgc taccccacct gggcctcccc ttgcaggggc caggccagag ccccgggggcg  3300

gggggcattg gggctcccac ctaagtgtcc cccatcccca ggactgtgcg gctgctgaga  3360

agtgctgcat caacgtgtgt ggactgcaca gctgcgtggc agcacgcttc cccggcagcc  3420

cagctgcgcc gacgacagcg gcctcctgcg agggctttgt gtgcccacag cagggctcgg  3480

actgcgacat ctgggacggg cagcccgtgt gccgctgccg cgaccgctgt gagaaggagc  3540

ccagcttcac ctgcgcctcg gacggcctca cctactacaa ccgctgctat atggacgccg  3600

aggcctgcct gcggggcctg cacctccaca tcgtgccctg caagcacgtg ctcagctggc  3660

cgcccagcag cccggggccg ccggagacca ctgcccgccc cacacctggg gccgcgcccg  3720

tgcctcctgc cctgtacagc agcccctccc cacaggcggt gcaggttggg ggtacggcca  3780

gcctccactg cgacgtcagc ggccgcccgc cgcctgctgt gacctgggag aagcagagtc  3840

accagcgaga gaacctgatc atgcgccctg atcagatgta tggcaacgtg gtggtcacca  3900
```

gcatcgggca gctggtgctc tccaacgcgc ggcccgaaga cgccggcctg tacacctgca 3960

ccgcgcgcaa cgctgctggg ctgctgcggg ctgacttccc actctctgtg gtccagcgag 4020

agccggccag ggacgcagcc cccagcatcc cagccccggc cgagtgcctg ccggatgtgc 4080

aggcctgcac gggcccccact tccccacacc ttgtcctctg gcactacgac ccgcagcggg 4140

gcggctgcat gaccttcccg gcccgtggct gtgatggggc ggcccgcggc tttgagacct 4200

acgaggcatg ccagcaggcc tgtgcccgcg gccccggcga cgcctgcgtg ctgcctgccg 4260

tgcagggccc ctgccggggc tgggagccgc gctgggccta cagcccgctg ctgcagcagt 4320

gccatccctt cgtgtacggt ggctgcgagg gcaacggcaa caacttccac agccgcgaga 4380

gctgcgagga tgcctgcccc gtgccgcgca caccgccctg ccgcgcctgc cgcctccgga 4440

gcaagctggc gctgagcctg tgccgcagcg acttcgccat cgtggggcgg ctcacggagg 4500

tgctggagga gcccgaggcc gccggcggca tcgcccgcgt ggcgctcgag gacgtgctca 4560

aggatgacaa gatgggcctc aagttcttgg gcaccaagta cctggaggtg acgctgagtg 4620

gcatggactg ggcctgcccc tgccccaaca tgacggcggg cgacgggccg ctggtcatca 4680

tgggtgaggt gcgcgatggc gtggccgtgc tggacgccgg cagctacgtc cgcgccgcca 4740

gcgagaagcg cgtcaagaag atcttggagc tgctggagaa gcaggcctgc gagctgctca 4800

accgcttcca ggactagccc ccgcaggggc ctgcgccacc acgtcctggt gaataaacgc 4860

actccctgtg cctcag 4876

<210> 707

<211> 4587

<212> DNA

<213> Homo sapiens

<400> 707

gcactcagat tctcccccaaa cgccaaggat gggggtcatg gctccccgaa ccctcctcct 60

gctgctcttg ggggcccctgg ccctgaccga gacctgggcc gcgactccgt gagtccgagg 120

atggagcggc gggcgccgtg ggtggagcag gaggggctgg agtattggga ccaggagaca 180

cggaacgcca agggccacgc gcagatttac cgagtgaacc tgcggaccct gctccgctat 240

```
tacaaccaga gcgaggccgg tatgaacagt tcgcctacga tggcaaggat tacatcgccc   300

tgaacgagga cctgcactcc tggaccgccg cgaacacagc ggctcagatc tcccagcaca   360

agtgggaagc ggacaaatac tcagagcagg tcagggccta cctgagggca agtgcatgga   420

gtggctccgc agacacctgg agaacgggaa ggagacgctg cagcacgcgg atcccccaaa   480

ggcacatgtg acccagcacc ccatctctga ccatgaggcc accctgaggt gctgggccct   540

gggcctctac cctgcggaga tcacactgac ctggcagcag gatggggagg accagaccca   600

ggacacggag cttgtggaga ccaggcctgc aggggacgga accttccaga agtgggtggc   660

tgtagtggtg ccttccggag aggagcagag atacatgtgc catgtgcagc atgaggggct   720

gccagagccc ctcaccctga gatgggagcc gtcttctcag cccaccatcc ccatcgtggg   780

catcgttgct ggcctgtttc tccttggagc tgtggtcact ggagctgtgg ttgctgctgc   840

gatgtggagg aagaaaagct caggcagcaa ttgtgctcag tactctgatg catctcatga   900

tacttgtaaa gaggactatg cctgttcctg ttctggtgtc tgcgttctga tctctttctc   960

ccctgggtgt ccctcatctc tgacagcagc aggagtcatt tttcctgtca ttaaccccac  1020

aaggtggaag gcagcccctg cacacagaag tctgtggtat taagagatga attttcaagc  1080

ccgtgcagct tttaccctat ttccagggct ctttcttggg ttgtattttc tatcttttcc  1140

ccaacctttt taaaggaact agattctgaa attagcagag aagagggatg ccacaagttc  1200

tcatcttagg taactttcta gtggaactcc tcttctgctc agctctccta cccactctcc  1260

cttccctgag ttgtagtaat cctagcactg gctctaatgc aaactcatgg atctataaag  1320

caaagtctaa cttagattta tatttgtttg gaaattggga ttcatagtca aagattgttc  1380

tttcctaaga gggaaatata attgcatgct gcagtgtgca gagggttggt gtgaaggagg  1440

gatgcaggga ggaagggagg gaggacacac aagcagcact gctgggaaaa gcacaggcgg  1500

cctggatgtc agtgtgaggg gaccttatgc tgtcgttgct gcaaaaccgc atttggcctg  1560

aggctatgtt aataaagata ctgcctttag aataggaggt gctctacagt gatgattcat  1620

tcagccgaca tttgctgtct gccagacata tgacagaatg tttttgcatc tggggaaagt  1680

cattgaagta aaatcagaaa aatctctagc cttgtggagc atgtgttcca gtgggaagag  1740

gcagacggta catacactct aatatatgca gagtaaatga ggaaagtgtt agaaggtgat  1800

aagtgctgtg aacaggtga tcagagtatg ggttgtggga cagagaaggt agctattgtg  1860

ccggggttgt cagcgtgggc cttgttggga aggtgacctt tgatgaaata tttgaaggac  1920

ataaaggaat ttgtcatgag ggtatctgga agaagttttt tctagggagt aggaaccttc  1980
```

agtgtcagtg taccagggca ggatcatgtc tgtgtgttct gggaagaaca cgggatcggg 2040

tatggctaga gcagagagtc actgagataa ggtcaggggt ttggtcagat catgtgggca 2100

tagggctcaa gtatgtggga aggattttga ttttgaatga gatagtttta agcagaataa 2160

agacatgcca caacttctct tttaaaagga tcactgtagc tgctctgctg agaacagaat 2220

ccaaaggccg gcgatgagca aggcaggtgg gagaactgta ggaaatgagt gcagtatttc 2280

aggctggaga tgtcggttac ttcaactggg gtgtgagcag tggaaatagt gggacgtgat 2340

tggattccta ctatttccaa tcactttata ccgcattttc taatggacta aatctggggt 2400

atgagaaaga agagtaaagg ataccaaaaa tgtcagactg tgactaaaaa gagttgccat 2460

cagctgagaa tgagaagact agcaggagca tatgagagga ggggacgtcg caggcagtca 2520

ctatgggaga cgtgggatct gagatgccgc tgagaaatac cagtgaggta gtcgggttgg 2580

cagttggaca gatgaatctg gagacattta ggagaaatag acttgggagg tgatgtcata 2640

taacagttat ttaaagcctt gagtctgaat gacgtctcca agggagtgat tggctgtaga 2700

agagaacagg aacaaggact gaacactagg cctctgttgc taaaggatct gatcagacaa 2760

cacacctaga tcagactgca cagtcctgac cccacatcta gaaggtacat agaccaggga 2820

gttctagact ttcctgtgga caggaatcac ctggacatca ccttaagtct aagctgatct 2880

ggaatcgaga atgagatttc ctacttatat aatgttgctg ttggcgctga tgctgctggt 2940

cttcagatcc cacttttggt agcaagaaca cagaccagga ttcctaggct atgcatcagc 3000

ctcgcctgtg aggcttgtta ataagcaatt cctgcactcc atgcgcaaca ttctgacaca 3060

ggggcatctg tggagaggcc tgagtattct acaacaagcc cacagcaaac ctggtgctca 3120

gccagatttg atatcactga gatcagtagt tggagaatgc ccaggatggg gaggggtctc 3180

agacccacat ttaagtgttg ctttattctg ggttttttat ttatttattt atttattttt 3240

aaggaggatg tgtttcttta attataagac aggatgctga gagataaatg tcattttctc 3300

tatcatgggg tatagccaga tggaagattg agaagtggct cacagctcag cagaatgaaa 3360

aaatatctga atgctgcttt ctgaaactac tctccagaat gatttcacac tcactccttg 3420

gagcaaacaa tgacttgcaa attttctaa tttaaacata aaggagtgta catattggta 3480

ttagtattca ttttattttg gggaagggca ctgtattagt ccatagtccg ttttcacact 3540

gccgataaag acatacccaa cattgggaag aaaaagaggt ttaattggac ttacagttcc 3600

atttggctgg ggaggcctca gaatcatggt gggaggcgaa aggcacttct tacatggtgg 3660

tggcaagaga aaatgaggaa gaagcaaatg ccaaaacccc tgataaacac attggatctc 3720

```
aggagactta ttcattatca tgagaatagc atgggaaaga ctggccccca tgattcaatt  3780

acctcccct gggtccctcc cacaacatgt gggaattctg ggagatacaa ttcaagttga  3840

gatttgggtg gggacacagc caaaccacat tggacacaga accaggtttg aagctacaca  3900

gccaggaaca taatccacag ccaccctaat tcagatctct cataggaacc actgtccctg  3960

ctcctgagca cagatgctac tgcatatacc tctgataccc tgatggccga cactgggccc  4020

tgtggcaaag actgctatca ctgctgctcc tgagaactgc tccactactg ctcctcagcc  4080

atctttacca aaatgcagta tttactgtcc cagcctctct gtgtcatctc atcctgatta  4140

gaagcccaca tgtggttatc taaattgtgc agccaaagcc tcttgcagtg tttaactgca  4200

ataatgttgg ggaaagtgaa tttttctcct ttgtagaagg aggtagtccc tgccttctaa  4260

taagactctt caacatagga agagaattca gttgctggag gtagaggggt gagggatgga  4320

aaaagaatga caaatttcaa ttcctagaat catgttctga gactagaact ttatctagta  4380

cattgcaggc acctgggttt ggttgagtgt ataataaatg acatagttca acttattccc  4440

ttgacagttt gttttggggt ccagcttttg tctaccccag ttttcacaca cagatacgtg  4500

gagaagcatt gtgtgatggt aaaatgttta cttgaaagcc tttttcccta tctttgtctc  4560

ttgctaggat taaaaacccg tatctgt                                     4587
```

<210> 708

<211> 3812

<212> DNA

<213> Homo sapiens

<400> 708

```
caaacccaca attccgtcat tggcgtgccc atccgggaga ctcccatcct ggatgactat   60

gactgtgagg aggatgagga gccacctagg cgggccaacc atgtctcccg cgaggacgag  120

tttggcagcc aggtgaccca cactctggac agtctgggac atccagggga agagaaggtg  180

gactttgaga agaaagcagc agctgaggcg actcaggaga cagtggagtc cctgatgcag  240

aagttcaagg agagtttccg cgctaacacg cccatcgaga tcggtcagct gcaaccaccc  300

ctgcgcagca catcggcagg gaagaggaag cggaggagca agtctcgagg aggaatcagc  360
```

```
tttgggagag ccaagggggac gtcgggctca gaggcagacg atgaaactca gctgacattc   420

tacacggagc agtaccgcag tcgccgccgc agcaaaggtt tgctgaaaag cccagtgaac   480

aagacagccc tgacactgat tgctgtgagt tcctgcatcc tggccatggt gtgtggcagc   540

cagatgtctt gtccactcac tgtgaaggtg actctgcatg tgcccgagca cttcatagca   600

gatggaagca gcttcgtggt gagtgaaggg agctacctgg acatctccga ctggttaaac   660

ccagccaagc tttccctgta ttaccagatc aatgccacct ccccatgggt gagggacctc   720

tgtggacaaa ggacgacaga tgcctgtgag cagctctgcg acccagaaac cggagagtgc   780

agctgtcatg aaggctatgc ccctgaccct gttcacagac acctgtgtgt gcgcagtgac   840

tggggacaga gtgaaggacc ttggccctac acgacacttg agaggggcta tgatctggtg   900

acagggggagc aagcccctga aaagattctc agcttgggcc aaggcctctg gcttcctgtc   960

agcaaaagct ttgtggttcc gcctgtggag ctgtccatca acccccctggc cagctgcaag  1020

accgatgtgc tcgtcacgga agaccctgca gatgtcaggg aagaagcgat gctgtccaca  1080

tactttgaaa ccatcaatga cctgctgtct tccttcgggc cagttcgtga ctgctctcgg  1140

aacaatgggg gctgcactcg caacttcaag tgtgtgtctg accggcaggt ggattcctcg  1200

ggatgtgtgt gccctgagga gctgaaaccc atgaaggatg gctctggctg ctacgaccac  1260

tccaaaggca ttgactgctc tgatggcttt aatggcggct gtgagcagct gtgcctgcag  1320

cagacgctgc ccctgcccta cgatgccact tcgagcacca tcttcatgtt ctgcggttgc  1380

gtggaggagt acaaactggc tcctgatgga aaatcctgct taatgctctc agatgtctgc  1440

gagggcccca agtgcctcaa acctgactcc aaattcaatg ataccctctt tggagagatg  1500

ctacatggtt acaacaaccg gacccagcat gtgaaccaag gccaagtctt ccagatgacc  1560

tttagggaga acaacttcat caaggacttt ccccagctgg ccgatgggct gttggtgatc  1620

ccgctgccgg tggaggagca gtgccggggg gtcctctccg agcccctttcc ggacctccaa  1680

ctgctcactg gagatatcag gtatgatgag gccatgggtt accccatggt gcagcagtgg  1740

cgggtccgga gcaacctcta ccgtgtgaag ctcagcacca tcaccctcac agcaggcttc  1800

actaatgttc tcaagatcct gaccaaggag agcagtcggg aggagctgct gtccttcatc  1860

cagcactatg gctcccacta catcgcagag gccctctatg gctcagagct cacctgcatc  1920

atccactttc ccagcaagaa ggtccagcag cagctgtggc tccagtatca gaaagagacc  1980

acagagctgg gcagcaagaa ggagctcaag tccatgccct tcatcaccta cctctcaggt  2040

ttgctgacag cccagatgct gtcagatgac cagctcattt caggtgtgga gattcgctgt  2100
```

```
gaggagaagg ggcgctgtcc atctacctgt cacctttgcc gccggccagg caaggagcag   2160

ctgagcccca caccagtgct gctggaaatc aaccgtgtgg tgccacttta taccctcatc   2220

caagacaatg gcacaaagga ggccttcaag agtgcactga tgagttccta ctggtgctca   2280

gggaaagggg atgtgatcga tgactggtgc aggtgtgacc tcagcgcctt tgatgccaat   2340

gggctcccca actgcagccc ccttctgcag ccggtgctgc ggctgtcccc aacagtggag   2400

ccctccagta ctgtggtctc cttggagtgg gtggatgttc agccagctat tgggaccaag   2460

gtctccgact atattctgca gcataagaaa gtggatgaat acacagacac tgacctgtac   2520

acaggagaat cctgagtttt gctgatgac ttactctctg gcctgggcac atcttgtgta   2580

gcagctggtc gaagccatgg agaggtccct gaagtcagta tctactcagt catcttcaag   2640

tgtctggagc ccgacggtct ctacaagttc actctgtatg ctgtggatac acgagggagg   2700

cactcagagc taagcacggt gaccctgagg acggcctgtc cactggtaga tgacaacaag   2760

gcagaagaaa tagctgacaa gatctacaat ctgtacaatg ggtacacaag tggaaaggag   2820

cagcagatgg cctacaacac actgatggag gtctcagcct cgatgctgtt ccgagtccag   2880

caccactaca actctcacta tgaaaagttt ggcgacttcg tctggagaag tgaggatgag   2940

ctgggggccca ggaaggccca cctgattcta cggcgactgg agagggtgag tagccactgc   3000

tccagcctcc tgcggagtgc ctacatccag agccgcgtgg aaacagtgcc ctatcttttc   3060

tgccgcagcg aggaggtccg gcctgcaggc atggtgtggt atagcatcct caaggacacc   3120

aaaatcacgt gtgaggagaa gatggtgtca atggcccgaa acacgtacgg ggagtccaag   3180

ggccggtgag ggagggtatt gccctccgtg agcacagaga ctctccatgg gagggggagc   3240

agtattctcc tggatcctgg ggcctgggtg ggctggggga cagctgagga tgggcctagc   3300

agatgaagct tgccagcaag gccaaagcaa acggtttctc ctgtggatag tggacagaga   3360

cctttgtaac caatggaatt attcattttt ctctatcttt tattttttca aagatattat   3420

ttgactctat caaaagtctc tccttttaa acctttctt atggatggct gtcaatccca   3480

aggcagaagt tttcaggtgg agaccaagcg gcctttgctc ttcttccttc ttcctgccac   3540

actctgcttt cttcctgcca tggacccctg gaggagacct atggagggac agttttgacc   3600

tgacccctag aggagacagt tttgacctct tcagcaccag gaaggaagct ctgaggatgg   3660

ttgcagtgag gaagcatggg tctttaagga cttctctctc ttttttgctg gacattattg   3720

agtttgtggg accctgcctc ttcctgctac ctgtgggtct gcccagagtc cctgcaggcc   3780

tgtccatgca ttaaaaattc ctattgtctc tc                                 3812
```

<210> 709

<211> 4346

<212> DNA

<213> Homo sapiens

<400> 709

```
tgtattttta gtagagacgg gatttcacca tgttggccag gctggtcttg aactcctgac      60
cttgtcatcc acccgcctcg gcctcccaaa gtgctgggat tacaggcgtg agccactgcg     120
cccggcctga acggaacttt ttaatcttaa gagcctagag tccgtttaac actgtcacct     180
ggacagttct ttgcggtgaa tagaagtgga gcatccaggc ctccccgtgc cgtgggaagc     240
acgccgccag ctccgcacag tcaagtgatg tttgtgtaac caccgactat acccctagga     300
tccccaagga aggagccacc cctcggccag tcaccatgtc tgcggtgctc ctctcacgcc     360
cttgtcccct tgggctcggg catcacccct gctctcccct cagacctggg agtcacccct     420
gcactccccg caggcccagg agtcacccct gcgctcccca cagctccgac gtcacccctg     480
cattccccgc aggcctgggt gtcacccctg cactccccac aggcccaggc gtcacccctg     540
cgctccccac ggccccaacg tcacccctgc gctccccgcg gcccgggtgt cacccctgtt     600
gttcccgcag gccccggtgt cacccctgca tttcccatgt tcccgatatc acccctgtgt     660
tccctgcagt ccccagtgtc acccctgcgc tccccacggc tccgatgtca cccctgcatt     720
ccccgtgggc ctgggcatca cccctgctct ccccgcaggc ccaggcgtca cccctgcgct     780
ccccgtgggc ctaggcatca cccctgctct ccccgcaggc cctgggctgc atcttgtacc     840
tgctgtgctt ccggcagcac ccttttgagg atggagcgaa acttcgaata gtcaatggga     900
agtactcgat ccccccgcac gacacgcagt acacggtctt ccacagcctc atccgcgcca     960
tgctgcaggt gaacccggag gagcggctgt ccatcgccga ggtggtgcac cagctgcagg    1020
agatcgcggc cgcccgcaac gtgaacccca agtctcccat cacagagctc ctggagcaga    1080
atggaggcta cgggagcgcc acactgtccc gagggccacc ccctcccgtg ggccccgctg    1140
gcagtggcta cagtggaggc ctggcgctgg cggagtacga ccagccgtat ggcggcttcc    1200
tggacattct gcggggtggg acagagcggc tcttcaccaa cctcaaggac acctcctcca    1260
```

aggtcatcca gtccgtcgct aagtgagtgt gaggctccag agccctggac ctgccgcacg 1320

ctcgttccag gctgcagccc cggcccttgc ttcctggctg cggtggaaca gctggtcatc 1380

aggccccaca ggggcccctg aggcagtggg acagcatcac ccgcttctcc cagggagtcg 1440

gaatgagccc agcatcccac agagccaggc agatcccttt cctttcatcg cctgggggc 1500

aaggccctgc tgaggagatg cctgggccct cccctccctt gctgcaatgt cgccctcac 1560

tctggggcgt tcctggcttg ttcccgggac tctgtaaatt gggtgaaacc tcggtggtgg 1620

cgcctcactg agccagtcct tgagttaaag ccctagttac tcagacttag accaggtgag 1680

tcccagcctg tggtgggaga aagtctccct ctgggtgggc tgtccaaggg cgcgtctgtg 1740

cggggggtggc cccgacatcg gcccacaggc ccggcagcct ctgctcacgg aacactggga 1800

atgttccaga gtgcggcccc tctgcgttgc ggggtccatg cgctggctct tctgaggagc 1860

tgaacgccca ggagcacgct ggctgctcat ctggccctgc ggtcgcacca gctcaagggc 1920

gtcggctatg tcaggaaaca gcctaggagc tgggctggac tggtgcccgt gatgcaggaa 1980

ctgcggcccc tggtgggccc acgttccttc cacagctggc gacaccttcg ggctttttct 2040

tatgtttttt gttctgtgct gtgatcactg ttttgtgtcc ccagcaccag gtagacgtgt 2100

gtgcacttgt gcctgcatgt accgcagcgt ctgcacatgt gagcgtgggt gcatgtgtct 2160

ttgagcatgt gtgcatgtga gggaatgggt gtgttaacat acatatgtga acatgtgtgc 2220

atgtgtgtgt aaatgctggt gtgagtatgt gcataggcgt gtgtgattgc tggtatgagc 2280

atgtgtgctg gtgcttgtga gtccttgtgc ttgtgaatcc ttgtgtgagc tgagtgctcg 2340

tattgtgtgc aggcacgtgt atgagcacat gtgcatgttg gagcatgtat gcgtgtgtgc 2400

atgtgtatgc atgtgtagga gtgcttgtga gtgcgcgtga gctgtgtgca tgtgtacacg 2460

tgtgcgagtg cctgtgagtg cacgtgaact gcatgcatgt gtacgcatgc gcgcgagtgc 2520

ctgtatgagc cgcgtgcatg tgtacgcatg agtaggagtg cctgtgagtg tgcgtgagct 2580

gcgtgcatgt gtacacacgc atgcaagtgt gtgtgagcca catgcatgtg tacgcatgca 2640

cacaagtgcc tgtgtgcgtg agctgcgtgc atgtgtatgc atgtgtgcga gtgcctgtga 2700

gtgcatgtga ccgcatgca tgtgtgcaca tgcgcgcgag tgcctgtgcc tgagctgtgt 2760

gcacatgtat gcatgcgtag gagtgcctgt gagtgagcat gagccgcgtg catgtgtaca 2820

cgtgtgagtg cgcgtgagcc gcgtgcatgt gtacacgtga gtgcgcgtga ccgcgtgca 2880

tgtgtacacg tgagtgcgcg tgagccgcgt gcatgtgtac gcgtgagtgc gcgagccgcg 2940

tgcatgtgta cgcgtgtgtg cgcgtgagcc gcgtgcatgt gtgcgcatgt gtgtgagccg 3000

```
cgtgcatgtg taagcgtgtg taggagtgct gtgcgagcgc ctgtgtgtgt gagctgtgtg  3060

cctgtgagtg cgtgtgggcc gcgtgcatgt gtaggagtgc tgtgtgagtg cctgtgtgtg  3120

tgagctgtgt gcctctgtgt gtgctgcatg tttggctgtg tggttccatt acctgtgtgc  3180

cttgtccttg tgcaaccttt tggaaagaaa cctgctctta gtgggcctgc atatccccag  3240

agcaggacgt gagcccactc gcacctctgg gcacctcctc tgtgacgcct cctgcctgag  3300

ttgtggctga cagaagatca gaggcagctc tgtctgtctg gtgccagcgc accacccact  3360

gggcccaggg ctgtggctcc tgcagggtcc tgacaggtga cactgcgtgt ggagcgtcag  3420

cagggctagc catggaccca gggggatgag agactctcca gcgtcatctt ggtgagagtg  3480

atgttgggat cagagtggaa acaagacaga gaggatgcgg cagcaaagcc ataagtgaaa  3540

gtcactagga acggtcactt tcggcatcag tgaaaatggt ctccatggcc gcagcacatt  3600

gtggggacag gcagagtgga gtcagcagag ggaggaggca tgtggggcgt tcagggagcc  3660

gggcacagct ccagagtcct ccctggggga ctccaggcca cgctccctcc ccagcagctg  3720

tggggatggt gggagctgct gtctgctgga agcctaaggc cgcaggggct ggttctagaa  3780

atggctctgc tgggacccat gggttccagg ccctaggagg acacagtttg gcttgagcag  3840

gcgctgcttg catggcactc aggcacagct agctgctgct tgttagggga tggtgggaac  3900

cctcctgaca cccccaggtt ccagctgagg gcagccctgc tgtttgtttt gctctgcctt  3960

ctgttcacat cacgtgcttg aggcagatga agctgcataa cctcgtgttt ctaaagttga  4020

cttagaagca acagtgagtt ctggttgggc ctggaggctc aaaagatggc tgggcacggt  4080

ggctcgtgta atcccagcac ttcggggggc cgaggaggga ggatcacttg aagattgaga  4140

cgagcctgga caacacaaca acacagcaag accctgtctc tacaaaaata aaaaattagc  4200

tgggcgaggt ggcgtgcacc tgtggtccca gctacactgg ggcctgaggt gggaggatcg  4260

cttgagccca ggaggttgag gctgcagtga gttgtgattg tgccactgca ctctggcctg  4320

gagtgagcaa gaccctgcct caattt                                      4346
```

<210> 710

<211> 5328

<212> DNA

<213> Homo sapiens

<400> 710

```
gtgggtttca tagctgtgtg ttttcatttg gctcctcttc cttggggatt gccttgtctc    60
ctagcaagat tcagggtgct ggggactgtg gctgtatttc ttcagcagtt cagagtcttt   120
ggtttattgg tcatcatcac ccacttgtgg aaaagacaca ttcatgtgtc cagcacatgt   180
cttgtctatc cccggctcca tcttatgcct gcgggagggg agattctagt ccccacaccg   240
tgttgtgagg gtttgggaag gacctgaagc cagcaggcag ccttcattgt gagagctatg   300
ctctgatccc aaagctgact tttccatgcc aggtttcccc attgccctag gatctggtgt   360
ccctggtgga acttcgtccc gtgtctatgt gctctggagg cttaggtgta ggatccctgg   420
atgactggtg gggaaaggct gggggaccct gttgtccagc cttcttcttt cacagaggtg   480
gaaaccaggg cccagagcca ttaaatactg ccttccgggc atttcagagc ccgctgcttc   540
tatttttcta ttctcagtct gtcagagaga ccagtaagta ccagaatttt gacttcccag   600
agcctaggag agtgtatggc atatgacagg tgtttattaa tgtgtgttcg tgggaagaac   660
aaattgtgtc gctttcattg tctttcaata caatgaagat cagttcctct cctgggcccc   720
acttcataga aatatgcatt cctgacttca caaatggaac tgcccaagaa tccccactca   780
tgttttctcc ccggagcttc ccctgcaccc acattctctg cattggttag gaatatcctc   840
ataggcgcaa cactcctgaa tagcagacct tacacttgta ccccgacagg cctccttgtt   900
ccctgaagct aaccctgggc ctggctttgg ggtttgcagc cggatttgtc atcttctgtc   960
tgccagtttc actgacttgg ttattccaag gaattcctgg gacttccctt tgttaaaaaa  1020
taaacgttag gaatgagaag aggaactagc tactgcctgt gtcttcactc tgagtgactg  1080
agggaacttc attaaatctc agattcccct aacgatcctg agaatgaagg tgaacccaca  1140
gtcctgtaga acattctctc tgactgttga gcactccgct ttgtaccagg tgttctcatc  1200
aagtgtgcaa gcccctttta tgctcatacg accctcccaa cagccctagg atgtggagct  1260
gctattgtcc gcatttgcag atgaggagac tcaggctcag ggaggttgag tccccaggga  1320
ggctcaggcc actggagatg cctgtggaca agggtgcctg tttgtatttg gcctggacct  1380
gctcccagca tgctgggggtt taaacctggg cagttgggag ccattaaaaa atgaaaaggg  1440
gtcaggtgtg gtggctcatg cctgtgatcc cagcactttg ggaggccaag gggggggagat  1500
cacttgaggc caggagttcg agaccagtct ggccaacatg atgaaaccct gtctctaata  1560
aaaatacaaa aatgagccgg ccgtggtggt acgtgcctgt aatcccagct acttcagagg  1620
```

ctgaggcagg agaattgctt gaacctggaa gtggaggttg tgctgagctg agattgcacc 1680

actgcactcc agtctgggcg acagagtgag actccgtctc aaaaatgaaa ataaataaaa 1740

ataaaaatga aaaggatggg ctgggtgtgg tgactcaccc ctgtaatccc agcactttgg 1800

gaggctggtc tcgaactcct gacctcaggt gatctgcctg cctcggcctc caaagtgctg 1860

ggatgacggg cgtgagccac cgcacctggc ctgaaccatt ttaaagtgta caattcagtg 1920

gctttcagaa cattcacagt gttgtgcaag ccctacctct gtctggttcc aaaacttttt 1980

catcacccca aaaggagatg gtggctcttt caagacgcca gctttggcat caactggacc 2040

ttctggttgt ctgacttcgg acaagcattg taatttccag cctttgcttc ctcaccttta 2100

aaatggaaat aatgttgatc accttacggg cctttttaaa aagaacttga ttgaggtatg 2160

atgtatgtac ctcaaaatca agtcatccta agtgtacttt ttcagtactt tttcgtgaat 2220

ttgtggagtt gtgcacccat taccacaatc ccaattttag aacgtctcta tcatttcctg 2280

ttcccatctc cagctctgtg taaccacgag tctgctttct gtctgtatgg gtttgccttt 2340

tttagacatt tataccaatg gcagctgaca gtacatggtc ttcatgcctg gcttctttca 2400

ctcagcatcc tgtttccgag gttcatccat gtagttgcgt gtggcagcgc ttcattcctc 2460

tctgtggctg aggaatattc cattgtgtgg acggaccgtg ttttgataat ccactcctct 2520

gttgatggac ataggggttg cttccacctt ccatgattca tatttactac tgtgtgtcat 2580

tctcagtact gtggcactgt gctggtacac ataagtgctt aataattgtg gttagccggg 2640

cgtggtggct cacgcctgta gtgccaacac cttgggaggc caagctgggc ggatcactta 2700

aggccaggag tttgagacca gcctggccaa cgtggcgaaa ccctgcttct actaaaaata 2760

caaaaaatag ctgggtgtgg tggcggacgc ctgtagttcg agctacttgg gaggctgaga 2820

catgagaatg gcttgaaccc tgggggcaga ggttgctgtg agccaagatt gcgccactgc 2880

actccagcct gggcaacagg cttttctctc aagaaaaaga aaaatggtgg tcattgttta 2940

tgttatttcc ttatgggctt tttttttaat gtggatgatt ttcttacctt tagacgtgtt 3000

atttgtggtt ttgatagctt tttttgtca tgctgtccgt catcgttctg aaattttgtt 3060

tgttaaagtc ttatgatcca catatggcag taactgtgta tcatcatggc ttaagggtgt 3120

ctgataagcc aggtcacctg gttccctcat tcatgccaca agcgtttact gagtgcatca 3180

tgggtgcctg cgggttctat gggtgaaacc tgtgtactgc aagaggaaag actgactgca 3240

tccattttgc tgagccctgt agccccacag cctggcgtgg tatttgttga aagaaggcag 3300

agcctctacc cccgtgtaac tcagtgcggg tggagagccc atggcagacc caggactgga 3360

ggctcctgcg tcattaggaa cattggtggc tgaagcttgc ttgtcccagc tggcgagagc 3420

caattacgcc tgtctccttc cacctccacg tatggtgaca tcactttgat agcttgacgt 3480

cagccactgg gggactattt acatcatgga tatgggcaaa agacaccaat ctgagctttt 3540

gtccttttct ttttttttgga gtgcctgcac acccgtgagc ctttccaacc tcgtaaccta 3600

ttattttcct gacgagatag ttttttacag atgagaaagt cgaggcacag agaattgaag 3660

ggacttggcc aaggtaacag cccaaattca agccccagct tcctcgggcc atccccacgg 3720

acatgggaag acgcagcatc agatctgccc cactccctcc tcccagtcag gttttttctg 3780

ccagatgact ctgctgttca atttccattg actctgctgc tgaatttcca ttgactgact 3840

ctgctgctga atttccattt ccatctctca tcagggtttt cagtgctttg cttcccagtg 3900

tgttgcctga gccaccctca catcctgtgc cttccttctt aataggaacg ctgtgttttc 3960

ctttgttctt gcagaatttc gctaaggagt ttgtgatcag tgatcggaag gagctggagg 4020

aagatttcat caagagcgag ctgaagaagg cggggggagc caattacgac gcccagacgg 4080

agtaacccca gcccccgcca caccacccct tgccaaagtc atctgcctgc tccccggggg 4140

agaggaccgc cggcctcagc tactagccca ccagcccacc agggagaaga gaagccatga 4200

gaggcagcgc ccgccaccct gtgtccacag cccccacctt cccgcttccc ttagaaccct 4260

gccgtgtcct atctcatgac gctcatggaa cctctttctt tgatcttctt tttcttttct 4320

ccccctcttt tttgttctaa agaaaagtca ttttgatgca aggtcctgcc tgccatcaga 4380

tccgaggtgc ctcctgcagt gacccctttt cctggcattt ctcttccacg cgacgaggtc 4440

tgcctagtga gatctgcatg acctcacgtt gctttccaga gcccgggcct attttgccat 4500

ctcagttttc ctgggccctg cttcctgtgt accactgagg ggcagctggg ccaggagctg 4560

tgcccagtgc ctgcagcctt cataagcaca cacgtccatt ccctactaag gcccagacct 4620

cctggtatct gccccgggct ccctcatccc acctccatcc ggagttgccc aagatgcatg 4680

tccagcatag gcaggattgc tcggtggtga gaaggttagg tccggctcag actgaataag 4740

aagagataaa atttgcctta aaacttacct ggcagtggct ttgctgcacg tctgaaacc 4800

acctgttccc accctcttga ccgaaatttc cttgtgacac agagaagggc aaaggtctga 4860

gcccagagtt gacggaggga gtatttcagg gttcacttca ggggctccca aagcgacaag 4920

atcgttaggg agagaggccc agggtgggga ccgggaattt aaggagagct gggaacggat 4980

cccttaggtt caggaagctt ctgtgcaagc tgcgaggatg gcttgggccg aagggttgct 5040

ctgcccgccg cgctagctgt gagctgagca aagccctggg ctcacagcac cccaaaagcc 5100

```
tgtggcttca gtcctgcgtc tgcaccacac attcaaaagg atcgttttgt tttgttttta  5160

aagaaaggtg agattggctt ggttcttcat gagcacattt gatatagctc tttttctgtt  5220

tttccttgct catttcgttt tggggaagaa atctgtactg tattgggatt gtaaagaaca  5280

tctctgcact cagacagttt acagaaataa atgttttttt tgttttttc              5328
```

<210> 711

<211> 4995

<212> DNA

<213> Homo sapiens

<400> 711

```
ttgatggagt gtcacacagg tggaggtttg cacagcacta ctgctatgtt agaacataca    60

actgggcatc cactaattcc atacgtgcat tttcatctcc tacagggtgt gtggctggaa   120

atgcagctcc atggcttaag cccttgcttt aggtgtctgg ccaagtagat catggccaag   180

cagaggggag ttcactgttt tctggggcca ggcaagaacc gacactggca gagccaaaga   240

gagtcggcat gtccaagagt attgggcaag gggctgccaa agaggcaggg tgaaatctgc   300

tggagagtca ctggcctccc tattccacaa gtaagcgtgg caggggtcag tagaggagag   360

agaagagaga gagagcagat tgcaggagag gcctcaggca gcctgaagag gaaaagtgcc   420

tcccctccct ggccctgctc tggtctgggt gtccctcag gccccaggcc cttcacaggg    480

aacccccagat aagcaatttg ccttccttgg gtgaggcaag agtttgcccct ttcggggaag  540

caggttgatg atactagggg cctgggggtc aagggcttgg ctcctttggt caactcattg   600

cccctgaggt ccactctggg gtcactagac tttctttccc tggaggaaac cccatgaagg   660

gcccggagca ggcttgtatg tccacctgat tgtcaaagct gccctggcat ggcaggctgt   720

ctgtctgtcg gcccctgtca cctgtcctct aagcctctcc accttctgcc acaggtgccc   780

tgaactctac ctgcctcctc ccttcctgcc actgggcctc tggcccaagt tgtttcctct   840

gctaggaagg cccccctgatc tcagctcttt ttcagggctc taggctgtcc tttttgagtg   900

tccctgggtg ctccagtgtg acctgacgca cagtggactc ccctgtccct atccccggcc   960

agctgcgtag cccctctcag gggccatgcc cagctaactt ggaagtgggg ctttctgggt  1020
```

gttttcttga cctcatccct ggctgacagc cccaagggta agacccagca cagagggttg 1080

cacgctgcca gggggctggtg aaacacacgc cacccacggc ctgcctcatc actgcctaca 1140

ttctcaggcc ctgcgcagct cctggtgtgc actgctacct ctggctgggc ctgtgggccc 1200

tcctgggtcc tggtccctag gagacattcc cttctggccc agttggcaga ttcagcctga 1260

ggtacgcttg ggattagctc tagacaaccc ttctgagggc ttagaggagc cagggtggcc 1320

ctgcctgccg gggggcttgt cttgggtcct aatctctacg agggctcagc ctcctcatct 1380

gtgaaatggg tatgttcaag cctcaatgct ttggggacca tttgacccac gagaaacaac 1440

tttaaattcc ctccaatcca ttgtgtcagt gccctccgtc cgctctactg tccgccccca 1500

ggggagaagt taggcagtgg gcatttgaac accaatggga acagtgcccg gagttctaac 1560

caaaagctgc cccataagtg tgggatgatt tggggaccgt cttggggaac caccaccatg 1620

tcttggaaac cagtgtgtac gaggacagct caggatatta tagctggttg ggccttatag 1680

tcccctccca ttatagggggg taaattgagg cctagagagg gaaggggttg tgccccagac 1740

ccgcaaagaa gatcagggca gtgcagtggc cttccagcgg cctgagggtc ccagatgagc 1800

tggaacacac ttccttatga ggctgttcag tggcttgatg tctatccttc aaggttgacc 1860

tcagagtcta cttcctcctt cgctgacacc cgctccagtc ccccttcctg aagcccacag 1920

cagctgttga gcctctgggg ctgctttctg tatagttgtc tgatttgaga tggggtccca 1980

ggtctcggtg gaatcgggag ctctgcacgt ggtgattgtg ggtgggggct ttggcgggat 2040

cgcagcagcc agccagctgc aggccctgaa cgtccccttc atgctggtgg acatgaagga 2100

ctccttccac cacaatgtgg ctgctctccg agcctccgtg gagacagggt tcgccaaaaa 2160

gacattcatt tcttactcgg tgactttcaa ggacaacttc cggcaggggc tagtagtggg 2220

gatagacctg aagaaccaga tggtgctgct gcagggtggc gaggccctgc ccttctctca 2280

tcttatcctg gccacgggca gcactgggcc cttcccgggc aagtttaatg aggtttccag 2340

ccagcaggcc gctatccagg cctatgagga catggtgagg caggtccagc gctcacggtt 2400

catcgtggtg gtgggaggag gctcggctgg agtggagatg gcagcagaga ttaaaacaga 2460

atatcctgag aaagaggtca ctctcattca ctcccaagtg gccctggctg acaaggagct 2520

cctgccctcc gtccggcagg aagtgaagga gatcctcctc cggaagggcg tgcagctgct 2580

gctgagtgag cgggtgagca atctggagga gctgcctctc aatgagtatc gagagtacat 2640

caaagtgcag acggacaaag gcacagaggt ggccaccaac ctggtgattc tctgcaccgg 2700

catcaagatc aacagctccg cctaccgcaa agcatttgag agcagactag ccagcagtgg 2760

tgctctgaga gtgaacgagc acctccaggt ggagggccac agcaacgtct acgccattgg 2820

tgactgtgcc gacgtgagga cgcccaagat ggcctatctt gccggcctcc acgccaacat 2880

cgccgtggcc aacatcgtca actctgtgaa gcagcggcct ctccaggcct acaagccggg 2940

tgcactgacg ttcctcctgt ccatggggag aaatgacggt gtgggccaaa tcagtggctt 3000

ctatgtgggc cggctcatgg ttcggctgac caagagccgg gacctgttcg tctctacgag 3060

ctggaaaacc atgaggcagt ctccaccttg atggagaggc caggcgggag aactaccgca 3120

gcaggtgggc gtacggactg cttggcgcat ggcacccgcc tggcaagtgc tagaactaat 3180

gctattcttc tggaataaga tgccaatgat gtggtggcta gaaatgcaac ttgtataaaa 3240

caaaaatggg agagagagag gtattaaaca aatacccccc ttagaggata ctttctgggt 3300

ttggaaggtg tgcttgctgt ggtactgggt gagcggctca tgtgtgctgg ctgcatggtg 3360

ctggggaggc cacagccagc ccttcctctg cacctgcctc ctctgggatg tgcatgtgtg 3420

tgtacgtgct tgtggtcatg acgcgtgcca tttagagctc tcagagcagg gcagattgct 3480

gggctctggt ggccagtgtc tgtctgtgag ggcaggaagg agagctgcac attgagaaca 3540

aaggagggac ctgaggtgga gagaggccca gcaccccaaa tctctgccat cacacggtcg 3600

gggagcccat acattctgca acaaccaggg acttcacagg agccttgttt tcaatttgct 3660

aacaggtgca taatccctgt gctccttaag cctcatggcc ttcctacatt tccactttat 3720

ttgtttgttt gtttatttat ttttgagaca gtctcgccct gtcacccagg ctggagtgca 3780

gtggcacgat ctcagctcac tgcaacctac gccttctggg ttcacgtgat tctcttgcct 3840

tagcctccca agtagctggg actacaggca cgtgccacca tgcctggcta atttttgtat 3900

tttttaaata gagacggggt ttcactgtgt tggccaggct ggtctcgaac acctgacctc 3960

aggtgatcca ttcgtcttgg cctctcgaag tgctgggatt ccaggcgtga gccactgcgg 4020

ccagcacatt tccactttta gatcctactc cataccacag gtttcattta agaagaaaga 4080

gctagataaa tgtgctcttc tggttacccc accctgacag agtgcatttt tacacggcta 4140

gcaggggttg agactgcagc ctggcctgcc agccattgga ggtgtttaag gaagggcaga 4200

taatgtgact ctttgcgggg tgccatctgc ttacccatta gcgagcagag ggggtttctg 4260

cgggtgaccc ccagcatatt tctaggttac ttatgggcag atttgtaagt gacaaaactc 4320

cagctgatgc tgggaatggg gagagggccc ttgagggact ttgtggtttt gtgcttctgg 4380

tttcctggcc aaccccaggg tcacttgtct ggaggcccag ctgggcacta atgtctgcca 4440

ccgactatgt tacagtgtat aaatgattcc tctatttggg agagatcttc caatccagag 4500

gagcccctct tggactgcct gggttaaatc tgcatagcag aagtggttga tgagttcatc   4560

tgaagaaatt caggccccac ctccccaccc tgcccctccc tgctcccttt tgatggtggc   4620

ctctgggtac tcgggcagag tccttgggac accagcctct ctggggttct caggccatcc   4680

cgttggggct gtcgcccagg cctaagtgag tcgtgtgcct ctattggagg atggctgttc   4740

ccctggtggt tgcatccaag tatctgtctt tctttatgga ccacgaaggg aagcccacct   4800

tcctggaggc aggaccttcg gcctaagaaa cacaggccct ggtgctatct gacctggggt   4860

ccagcgaggt gggaatccca gtgtgtgagc gacaggcctt cttctattga cttacaatat   4920

tctagaagga cctacgtgtg gggacacagt tttccaaact gaggaaaatg ttgcaataaa   4980

agaatatgtt gtaag   4995

<210> 712

<211> 3963

<212> DNA

<213> Homo sapiens

<400> 712

actctgcagc agcccccata ccagcaaccc ctgcggtcgg gctcagggcc ccacgactgc   60

agacacagtc ctcacgggtg ctgccccgat ggccacacgg catctctcgg gcctcagtgg   120

caaggctgcc ctggggcccc ctgtcagcag agcaggtacg ggtgctgccc tgacagggta   180

tctgtcgctg aggggcccca tcacgctggc tgcacaaagt cgtatggtgg tgacagcacc   240

gggggcaggc ccaggtcaag ggcagtggct tctacagtcc acaacaccca ccagccccag   300

gcccagcaga atgagcccag tgagtgccgg ggctcccagt ttggctgttg ctatgacaac   360

gtggccactg cagccggtcc tcttggggaa ggctgtgtgg ccagcccag ccatgcctac   420

cccgtgcggt gcctgctgcc cagtgcccat ggctcttgcg cagactgggc tgcccgctgg   480

tacttcgttg cctctgtggg ccaatgtaac cgcttctggt atggcggctg ccatggcaat   540

gccaataact ttgcctcgga gcaagagtgc atgagcagct gccagggatc tctccatggg   600

ccccgtcgtc cccagcctgg ggcttctgga aggagcaccc acacggatgg tggcggcagc   660

agtcctgcag gcgagcagga acccagccag cacaggacag gggccgcggt gcagagaaag   720

ccctggcctt ctggtggtct ctggcggcaa gaccaacagc ctgggccagg ggaggccccc　780

cacacccagg cctttggaga atggccatgg gggcaggagc ttgggtccag ggcccctgga　840

ctgggtggag atgccggatc accagcgcca cccttccaca gctcctccta caggattagc　900

ttggcaggtg tggagccctc gttggtgcag gcagccctgg ggcagttggt gcggctctcc　960

tgctcagacg acactgcccc ggaatcccag gctgcctggc agaaagatgg ccagcccatc　1020

tcctctgaca ggcacaggct gcagttcgac ggatccctga tcatccaccc cctgcaggca　1080

gaggacgcgg gcacctacag ctgtggcagc acccggccag ccgcgactc ccagaagatc　1140

caacttcgca tcataggggg tgacatggcc gtgctgtctg aggctgagct gagccgcttc　1200

cctcagccca gggacccagc tcaggacttt ggccaagcgg gggctgctgg gcccctgggg　1260

gccatccect cttcacaccc acagcctgca aacaggctgc gtttggacca gaaccagccc　1320

cgggtggtgg atgccagtcc aggccagcgg atccggatga cctgccgtgc cgaaggcttc　1380

ccgcccccag ccatcgagtg gcagagagat gggcagcctg tctcttctcc cagacaccag　1440

ctgcagcctg atggctccct ggtcattagc cgagtggctg tagaagatgg cggcttctac　1500

acctgtgtcg ctttcaatgg gcaggaccga accagcgat gggtccagct cagagttctg　1560

ggggagctga caatctcagg actgcccct actgtgacag tgccagaggg tgatacggcc　1620

aggctattgt gtgtggtagc aggagaaagt gtgaacatca ggtggtccag gaacgggcta　1680

cctgtgcagg ctgatggcca ccgtgtccac cagtccccag atggcacgct gctcatttac　1740

aacttgcggg ccagggatga gggctcctac acgtgcagtg cctaccaggg gagccaggca　1800

gtcagccgca gcaccgaggt gaaggtggtc tcaccagcac ccaccgccca gcccagggac　1860

cctggcaggg actgcgtcga ccagccagag ctggccaact gtgatttgat cctgcaggcc　1920

cagctttgtg gcaatgagta ttactccagc ttctgctgtg ccagctgttc acgtttccag　1980

cctcacgctc agcccatctg gcagtaggga tgaaggctag ttccagcccc agtccaaaat　2040

agttcatagg gctagggaga aaggaagatg gactcttggc ttcctctctc tggctggcaa　2100

agggagttat cttctggaat acattagctc tttcaaaaac ccacccagtg tttagcctca　2160

acggcagcca gttaccagct tctctctgta gccttcagca gtgtttgcat ctctgacata　2220

accacaggct gctgtttca agaagagcaa tctgtttgga taagaaaaac ctttacttta　2280

cagcttccct ttataatttg ttacacagga atagttaaat gcatttgttt gtttgttttt　2340

tgagacagag tttcactctt gttgcccagg ctggagggca atggcgcgat ctcagctcac　2400

tgcaacctcc gtctcctggg ttcttgattc tcctgtgtca gccttctgag tagctaggat　2460

```
tacagatgcc tatcaccatg cctgggtaat ttttgtattt ttagttgaga tggggtttca 2520

ccatgttggc caggctggtc tcgaacttct gacctcagat gatctgcccg cctcagcctc 2580

ccaaagtgct gggattacag gcatgagcca ccacgcccag ccatcaatgc attttttta  2640

ttttttttt gagacagagt ttcgcacttc ttgcccaggc tggagtacaa tggtgcgatc 2700

ttggctcact gcaacctcca cctcctgggt tcaagcgctt ctccagcctc agcctcctga 2760

gtagctggga ttacaggtat gtgccaccat gcctggctaa ttttgtattt ttagtagaga 2820

cggggtttct ccatgttggt cagactggtc ttgaactccc gacctcaggt aatccgcccg 2880

cctcggcctc ccaaaatgct gggattagag gtgtgagcca ctgtgcccag cccatcaatg 2940

tgttttaaag ctagctgtca gggttccact taatttaaag ctgggcaggg agatgtgtaa 3000

tgatttcaaa gttaacacct gtttgttttc taaagggcat gccaagtcct gctgtatcag 3060

ggaagtattc tgtgctaaaa tcagcgatgg ttcattgctc tagtctctct caccttcta  3120

ggcagtgcat cagtcagctc taaatctggt gcagagggtt aacagcataa cccttgttgg 3180

caaaatggaa tagatgttaa gacctcaaat agggatttgg gatgaaacag ctgcagttag 3240

cactgttatc tgagcatgaa agaactggaa acgctcctta cgtcgagatg ttggaccttg 3300

aagccctcct gaggccaaca tgcaaatctg gctgtgacgg ttcatctgac acctgtgtaa 3360

agctgaccag cctgctctgt acagtgacaa tgaggagccc ctctcttcct taagtaggaa 3420

tctgtgaagc aaaatgtttg ctgccaaaga caaatcagac tgtcagtcat taaaaacagc 3480

attagcagga tgaggatagc aatggggaag ggttgtgggc aatgcagtaa cagggaaatg 3540

gcttcagaaa tggtttgagt tggaagacaa cattcttcat ctctcaggac ttctaattcc 3600

ttgatgctaa aagaagaggc atggattcta tgagcttcca agtccctttc cactttaacc 3660

ttctacaaat ctttcagagg actgcctagt agcaaaggtt attcctggac acaggaaaga 3720

cgggcattac agggaccaaa gctctgaaag gtgactttta ttaccaacac actggctgga 3780

aaagggacaa accacatcac gggtgagtga tacttctcag tcttctctac tcattcaaca 3840

aaggaaatgt gggctggggc agaggtcttt tttcatttaa tactggaaaa atattgaaga 3900

gcatccatgt tcacttatgg ctggttttgc tatagaaatt ggaaaataaa ggccactttt 3960

ttg                                                                3963
```

<210> 713

●

<211> 4053

<212> DNA

<213> Homo sapiens

<400> 713

```
atttaaataa tgcaggctaa tgatgttgat ggcttggatc aagatagtgg caggggaagt    60

gataagaaat gggcagattt tgaatatata atatatgtca agccaggaag atttgtgtat   120

ggaatatgag agagaggaat caagaatgac tccagttttt atcctgagca aatagagtgg   180

agttgctata tgctgaaata caaaaacttt gaaaaaagca ggtttagtga gaaagatcag   240

gagcatagtt ttttatttta tttatttatt tatttgtttt attatacttt aagttccagg   300

gtacatgtgc acaacgtgca ggtttgttac atatgtatac atgtgccgta ttggtttgtt   360

gcacccatta actcatcatt tacattaggt atttctccta atgctatccc tcccccattc   420

ccccacccca tgacagggtg tgtgatgtcc cccgccctgt gtccaagtgt tctcattgtt   480

caattcccac ctatgagtga gaacatgcgg tgttcggttt tctctccttg cgatagtttc   540

ctcagaatga tggtttccag cttcatccat gtccctacaa aggacatgag ctcatctttt   600

ttatggctgc atagtgttcc atggtgtata tgtgccacat tttctcaatc cagtgtatca   660

tggatggaca tttgggttgg ttccaagtct ttgctactgt gaatagtgcc acaataaata   720

tacatgtgca tgtgtcttta tagcagcatg atttataatc ctttgggtat atacccagta   780

atgggatggc tgggtctaat ggtatttcta gttctagatc cttgaggaat caccacactg   840

tcttccacaa tggttgaact agtttacact cccaccaaca gtgtaaaagc attcctattt   900

atccacatcc tctccagcac ctgttgtttc ctgacttctt aatgatcacc attctaactg   960

gtgtgagatg gtatctcatt gtggttttga tttgcatttc tctgatggcc agtgatgatg  1020

agcatttttt catgtatgtg ttggctgcat aaatgtcttt tgagaagtgt ctgttcatat  1080

cctttgccca cattttgatg gggttgtttg attttttctt gtaaatttgt ttaagttctt  1140

tgtagattct ggatattagc cctttgtcag atgagtagat tgcaaaaatt ttctcccatt  1200

ctgtgggttg cctgttcact ctgatggtag tttcttttgc tgtgcagaag ctctttagtt  1260

taattagatc ccatttgtct attttggctt ttgttgccat tgcttttggt gttttagtca  1320

tgaagccctt gcccatgcct atgtcctgaa tggtattgcc taagttttct tctagggttt  1380

ttatggtttt atgttcaaca tttaagtctt aatccatctt gaattaattt ttgtataagg  1440
```

tgtgaggaag ggatccagtt tcagctttct acttatgact agccagttct cccagcatca 1500

tttattaaat aggaaatact ttctccattt cttgttttgg tcaggtttgt caaagatcag 1560

atggttgtag atgtgtggtg ttatctctga ggcctctgtt ctgttccatt ggtctacatc 1620

tctgttttgg tacgagtacc atgctgtttt ggttactgta gccttgtagt agagtttgaa 1680

gtcaggtagc atgatgcctc cagctttgtt cttttggctt aggattatct tgacaatgtg 1740

ggctcttttt tggttccatg tgaactttaa aatagttttt tccaattctg tgaagaaagt 1800

cattggtagc ttgatgggga tggcattgaa tctataaatt accttgggca gaatggccat 1860

tttcacgata ttgattcttc ctatccatga gcatggaatg ttcttctatt tgtttgtgtc 1920

ctctttcatt tcgttgagca gtggtttgta gttctccttg aagaagtcct tcacatccct 1980

tataagttgt attcctaggt attttattct ttttgaagca attgtgaatg ggagttcact 2040

cattatttgg ctctctgctt gtctgttatt ggtgtataag aatgcttatg atacatctct 2100

agaactcttc accccaatca acagaatata cattcctctc agcaccacat tgcacttatt 2160

ccaaaattga acacatagtt ggaagtaaag cactcctcag caaatgtaaa agaacagaaa 2220

tcataacaaa ctgtctctca caccacagtg caatcaaatt agaatttagg attaagaaac 2280

tcactcaaaa ccgcatgact acatggaaac tgaacaacct gctcctaaat gactactggg 2340

tacataatga aattaaggca gaaataaaga ttttctttga aatcaatgaa aagaaagaca 2400

acattccaga atctctggga cacatttaaa gcagtgtgta gagggaaatt tatagcacta 2460

aatgcccaca agagaaagca agaaagatct aaaatcgaca ccctaacatc aattaaaaga 2520

accagagaag caagagcaaa caaattcaaa agctagcaga aggcaggaaa taactaagat 2580

cagagcagaa ctgaagaaaa tagagacaca aaaaaccctt caaaacatca atgaatccag 2640

gagctggctt tttgaaaaca tcaacaacat tgatagaccg ctagcaagac tagtaaagaa 2700

gaaaagagag aagaatcaaa tcgacaaaat aaaaaatgat aaaaggaata tcatcaccga 2760

tcccacagaa atacaaacta ccatcagaga atactataaa cacctctatg caaataaact 2820

agaaaatcta ggaagaaatg gataaattcc tcgacacata gactcccccc aagactaaac 2880

caggaagaag ttgaatctct gaataggcca ataacaggct ctgaaattga ggcaataatt 2940

aatagcctac cacccaaaag aagtccagga ccagatggat tcacagccga attctaccag 3000

agatacaaag aggagctggt accattcctt ctgaaactat tccaatccat agaaaaagag 3060

ggaatcctcc ctaactcatt ttatgaggcc ggcatcatcc tgatatcaaa gcctggcaga 3120

gacacaacaa aaaaaagaga attttagacc aatatccctg atgaacatcg atgcaaaaat 3180

cctcaataaa atactggcaa actgaatcca gcagcagatc aaaaagctta tccaccaaga 3240

tcaagttggc ttcatccctg ggatgcaagg ctggttcaac atatgcaaat aaataaacgt 3300

aatccatcac ataaacaaaa ccaaagacaa aaaccacatg attatctcaa tagatggaga 3360

aaacaccttc gacaaaattc aacagccctt catgctaaaa actcaataaa ctaggtattg 3420

atggaacgta tctcaaaata ataagagcta tttatgacaa acccacagcc agtatcatac 3480

tgaatgggca aactggaagc attccctttg aaaactggca caagacagga atgccctctc 3540

tcactactcc tgttcaacat agtgttggaa gttctggcca gggcaatcag gcaggcgaaa 3600

gaaataaagg gtattcagtt aggaaaagag gaagtcaaat tgtccctgtt tgcagatgac 3660

atgattgtat atttagaaaa ccccaccgtc tcagccccaa atctccttaa gctgataagt 3720

aacttcagca aagtctcagg agcatagttt tttgattgtc aatattttgt tgctgaaata 3780

ggaaattcat caattgaggg ggagagagag gaagaggtaa ggaaggcttg aggcctgtca 3840

catagatttt aggatttttt ggaaaaaaag tcttctactt atgaagactt ctatatcctg 3900

agattataaa aatagattta tatatttctt acaggatttt catggttttt ttctgtacat 3960

ttgcatttta atgcacctga gtatttctgt atgttgtatg aggtgagaaa ctaacttat 4020

ttttttccc aaataaatat ccagttgact gag 4053

<210> 714

<211> 3475

<212> DNA

<213> Homo sapiens

<400> 714

tataaatgct tctcatcaga ctcaaggcct gaggtgatgc tgatgctgtg cctgaattcc 60

agcagggagg aggcatgagg tgcgtccgac tcccttccca tcacagctga gctagttttt 120

caggttaact ttggaatgcc catggctaag accaggggtc catccagaca gttcagggct 180

tataatttta ttttggttt atgagggaac ctagaaggca gcccacacgc acctttctcc 240

tcccagcagg ggacaccggc cagaccccaa gctccacact cccaccctca gcacccaccc 300

aggccagcag ccggggggcac cttggtgcca ccttagtgcc tgttctgcgg aggctccact 360

●

```
ggacagtgca gttgatgccc ggggccgagg gggctctgcc tgggaggctg ttcacctgcc   420
tgggtgcagg accccagagg gaccccaggc caccctggc ctgcccatgc ccacgggaat    480
cccgaccttg ggctgcctgt ctattgcacc agaaccgtcc cagggctgac tcagagtgac   540
cctgagtggg ggacgctcac cccaggggag gaaacggggc tctgggatag gaggtcctgg   600
ctggggtccc acagatgcca ggcgcctgcc atctccaggg cagtgctgtc acagaagaca   660
acaccgctcc ctcgttacct gtggcccggc cacctcagcg gcccaaggag gtgagctcac   720
agccatgctc ggtcaatggg gcctggccgt ctttcctggg agagagcaga ggcatgggcc   780
caaagggagc cagggatgcc tgcccgtccc ttctctcatt caggctcacc tggtcatggt   840
gcagtgacca caggaccccc acatgccggg agctgggttc gccccacccc accccctgca   900
ccgggccagc gaggggatgg cccagaagag ggggaggacc atgtggattc accagtgctg   960
gacatgtgct ctgtggctac cccctctgcc tactctctgg cccgatacag gggtgtggga  1020
caggcctggg tgactccagc atggctttcc tctccaggac gtcaccggtg gcagctgctt  1080
ccttccagag ccggcaggag gccagaggct ccatcctgct tcagagctgc cagctgcccc  1140
cgcaatggct gagcaccgaa gcatggacgg gagaatggaa gcagccacac gggggggctc  1200
tcacctccag gctgcagccc agacgccccc caggccgggg ccaccatcag caccaccacc  1260
accacccaag gaggggcacc aggaggggct ggtggagctg cccgcctcgt tccgggagct  1320
gctcaccttc ttctgcacca atgccaccat ccacggcgcc atccgcctgg tctgctcccg  1380
cgggaaccgc ctcaagacga cgtcctgggg gctgctgtcc ctgggagccc tggtcgcgct  1440
ctgctggcag ctggggctcc tctttgagcg tcactggcac cgcccggtcc tcatggccgt  1500
ctctgtgcac tcggagcgca agctgctccc gctggtcacc ctgtgtgacg ggaacccacg  1560
tcggccgagt ccggtcctcc gccatctgga gctgctggac gagtttgcca gggagaacat  1620
tgactccctg tacaacgtca acctcagcaa aggcagagcc gccctctccg ccactgtccc  1680
ccgccacgag cccccccttcc acctggaccg ggagatccgt ctgcagaggc tgagccactc  1740
gggcagccgg gtcagagtgg ggttcagact gtgcaacagc acgggcggtg actgctttta  1800
ccgaggctac acgtcaggcg tggcggctgt ccaggactgg taccacttcc actatgtgga  1860
tatcctggcc ctgctgcccg cggcatggga ggacagccac gggagccagg acggccactt  1920
cgtcctctcc tgcagttacg atggcctgga ctgccaggcc cgacagttcc ggaccttcca  1980
ccaccccacc tacggcagct gctacacggt cgatggcgtc tggacagctc agcgccccgg  2040
catcacccac ggagtcggcc tggtcctcag ggttgagcag cagcctcacc tccctctgct  2100
```

gtccacgctg gccggcatca gggtcatggt tcacggccgt aaccacacgc ccttcctggg　2160

gcaccacagc ttcagcgtcc ggccagggac ggaggccacc atcagcatcc gagaggacga　2220

ggtgcaccgg ctcgggagcc cctacggcca ctgcaccgcc ggcgggggaag gcgtggaggt　2280

ggagctgcta cacaacacct cctacaccag gcaggcctgc ctggtgtcct gcttccagca　2340

gctgatggtg gagacctgct cctgtggcta ctacctccac cctctgccgg cgggggctga　2400

gtactgcagc tctgcccggc accctgcctg gggacactgc ttctaccgcc tctaccagga　2460

cctggagacc caccggctcc cctgtacctc ccgctgcccc aggccctgca gggagtctgc　2520

attcaagctc tccactggga cctccaggtg gccttccgcc aagtcagctg gatggactct　2580

ggccacgcta ggtgaacagg ggctgccgca tcagagccac agacagagga gcagcctggc　2640

caaaatcaac atcgtctacc aggagctcaa ctaccgctca gtggaggagg cgcccgtgta　2700

ctcggtgccg cagctgctct cggccatggg cagcctctgc agcctgtggt ttggggcctc　2760

cgtcctctcc ctcctggagc tcctggagct gctgctcgat gcttctgccc tcaccctggt　2820

gctaggcggc cgccggctcc gcagggcgtg gttctcctgg cccagagcca gccctgcctc　2880

aggggcgtcc agcatcaagc cagaggccag tcagatgccc ccgcctgcag gcggcacgtc　2940

agatgacccg gagcccagcg ggcctcatct cccacgggtg atgcttccag gggttctggc　3000

gggagtctca gccgaagaga gctgggctgg gccccagccc cttgagactc tggacacctg　3060

aaccagacct gccagggctg tgcgatctct tggcctggtc cttgcagctg tggcagcagc　3120

aggctcccca gcggcccagg gtgggccaga ccagcagccc aggaagcagc acacgcggcc　3180

gtggggaggc aggcaccggg catgtcggcg cctctggtca aaccacctac actgcctggg　3240

gtgggtctca aggaggcccg gggcggaggg gggttcccgc gtgcacacga gtgcggctgg　3300

acgtgccgac acgcggtgat gtacccatgc tccgtgtgtc tgtgtctgca tgtccacacg　3360

tctgatgcac ctgtgtacgt gtgtcaagcc tagccacctc agctgcaggg aggcagaagg　3420

caaggcaggc cccacggaca cacttgggct gctctgaaat aaagctgttg actcc　3475

<210> 715

<211> 3767

<212> DNA

<213> Homo sapiens

<400> 715

atgcggaggg tggtgctcct cctgggcctc ttgaatgagg atgacgcgtg ccacgcctct   60

ttcttgcggg tatccaagat gcgcctcagt gtctttttaa agaagcaaga agagagccag   120

tttcaccctc tggagtggtt ggcaagggaa gcctgcaacc aggacgctct ccaggaggcg   180

ggcacattca ggcacaccct ctggaagcgg gtccaaggtg ctgtcacccc tctgctggcg   240

agcatgatat cattcatcga cagagacggc aacctagagt tactgaccag gccagatact   300

ccgccctggg caagagatct ttggatgttt attttcagtg acacgatgct tctgaacatt   360

cctcttgtga tgaataatga aagacataaa ggtgagatgg cctacatcgt ggtgcagaac   420

cacatgaacc tttccgagaa cgcttccaac aacgtccctt tcagctggaa aatcaaggac   480

tatctggagg agctgtgggt ccaggctcag tacatcacag acgcagaagg actgcccaag   540

aagttcgtgg acatctttca gcagactcct ctgggcaggt ttcttgccca gctccatgga   600

gagccgcagc aggaacttct tcagtgttac ttgaaggatt tcattctctt gaccatgcgt   660

gtgtcaacgg aggaggaatt aaagtttctg cagatggctc tgtggtcctg cactaggaaa   720

ctgaaagcgg cgtcagaagc gccccgaggaa gaggtttcct taccgtgggt gcaccttgcc   780

taccagcgtt tcagaagccg tctgcagaac ttttccagaa tcctgaccat ctaccctcag   840

gttctccaca gcctgatgga agcccgttgg aaccatgagc tggctggatg tgagatgacc   900

ctggacgcat ttgccgcaat ggcctgcacg gagatgctga caagaaacac cctgaagccc   960

agtccccagg cgtggctaca gttggtgaag aatctttcca tgccgctgga gctcatctgc 1020

tccgatgagc acatgcaagg cagcgggagc ctggcccagg ctgtcatcag ggaagtcaga 1080

gcccagtgga gtcggatttt ctccaccgca ctcttcgtgg agcacgtgct cctaggaacc 1140

gagagccgcg tccccgagtt acaggggctg gtgaccgagc acgtcttctt actagacaag 1200

tgtcttcgag agaactctga cgtgaagacg cacgggcctt ttgaggccgt gatgcgcact 1260

ctctctgaat gcaaggagac agccagcaag accctcagca ggtttgggat tcagccgtgc 1320

tccatctgcc tgggagatgc aaaggacccc gtctgtctgc cctgcgacca cgtgcactgc 1380

ctgcgctgcc tcagggcctg gtttgcctca gagcagatga tatgcccta ctgtttaact 1440

gccttgccag acgaattctc tccagctgtt tcccaagcgc acagggaagc cattgaaaag 1500

catgcccgct ccggcagat gtgcaacagt ttcttcgtag acctggtgtc caccatttgc 1560

ttcaaggaca acgctccgcc tgagaaggaa gtgattgaga gcctgctctc tctcctcttc 1620

gtccaaaagg ggcgcttaag agatgctgcc cagagacact gtgaacacac aaaatctctc 1680

tctccattca atgatgttgt ggataagact cctgtcatcc gctcagtgat actgaaactg 1740

cttttgaagt acagctttca tgatgtaaaa gattatattc aggaatattt gaccctgtta 1800

aaaaagaaag cattcataac tgaagataaa actgaactgt acatgctctt catcaactgc 1860

ctggaggatt caatacttga gacaccagtg cttactccag aaatgatgaa ctgaaccacc 1920

tagaagagga aggtcgtttc cttaaggcat attctccagc aagccggggc cgagagcctg 1980

ccaacgaggc ctcggttgaa tacctgcaag aggtggcccg gatccgcctc tgcctcgaca 2040

gagctgcaga tttcctctcg gagcctgagg gaggcccaga gatggccaag gagaagcagt 2100

gctacctgca gcaagtcaag cagttctgta tccgggtgga gaacgactgg caccgggtgt 2160

acctggtgcg gaagctcagc agccagcggg ggatggagtt cgtgcagggc ctctccaagc 2220

ccggccgccc gcaccagtgg gtgtttccca aggacgttgt caagcagcag gggctgcggc 2280

aggaccaccc aggccagatg gataggtacc tggtgtacgg cgatgaatac aaggctctcc 2340

gtgatgctgt ggccaaagct gtcctcgagt gcaagccact gggcattaag actgctctga 2400

aggcctgcaa gaccccccaa agccagcagt cagcctactt cctgttaaca ctgtttagag 2460

aggtggctat tttgtacaga tcccacaatg caagcctcca ccccacgcca gagcaatgtg 2520

aagctgtgag caaattcatt ggcgaatgca agatcctttc acctcctgat atcagccgtt 2580

ttgcaacatc gctcgtggac aattctgtgc cattgttgag ggcggggcct agtgacagca 2640

accttgatgg aacggtgaca gaaatggcca ttcatgctgc agccgtcctt ctgtgtggac 2700

agaatgaact cttggagccc ctaaagaatc tggccttctc cccagccacc atggcgcatg 2760

cttttcttcc aaccatgcct gaagacttgc tggctcaagc tcggaggtgg aagggtctgg 2820

agcgagtcca ctggtacact tgtcccaacg gccatccttg ctccgtggga gagtgtggca 2880

ggccgatgga acagagcatc tgcattgact gccatgcgcc gattggaggc attgaccaca 2940

aacctcggga cggctttcat ctggtcaaag acaaggcaga cagaacgcag accggccatg 3000

tgctgggcaa cccgcagcgg agagacgtgg tgacatgtga ccgagggctg cccccagtgg 3060

tcttcctcct tatccggcta ctcactcact ggctctgct tctgggagcg tcccagagtt 3120

cccaggctct gataaacatc attaagcctc cagtgaggga tccaaaaggc tttctgcagc 3180

agcacatcct gaaggacctg gagcagttgg ccaagatgct gggacacagt gccgacgaga 3240

ccatcggcgt ggtccacctc gtcctgcgca ggcttctcca agagcagcac cagctctcta 3300

gcagaagtga ggaaaggggc aagggctggg cggggatcac acagcacaac ggcagcgcaa 3360

gcaggctcgc tgtcttgtgg gccaccccac acacagccag tctgagctct gtctgtgctg   3420

ttgctggaaa gaatgagaga acacacagag agaaaaccgt gtctagggaa ggcgatgcct   3480

ggggctggaa aaaggaagca ctctgcttgc ccagaggctg gaaggagctg ctctgttccc   3540

tccattcacc cctgcctggc taagacctgc ggtattcggg agcgtctgca cgcaagtgtt   3600

cagtgtgcat atatggggag tcttcagttc cgaagtcagc cccgtaggtc attcccctac   3660

catgctggga gcacgtgtcg tccacacaga gcgtgcgtgt caaaggatca atcaccatca   3720

cagttgtgtg ctgatttatt aaatgtttat atgtccacag ttatgtt   3767

<210> 716

<211> 3503

<212> DNA

<213> Homo sapiens

<400> 716

tgccatctcc cttcaaggat ctcgaatggg agtgaagggt gggtttagct atattgactt   60

taactcattt ctcaggttgg aggatgtcag gacaagtaag gcctgggaag ctgtagagtg   120

aaattctaca atgatgggga cagagatgag gatcaccagt gtccccttta gcatgttctg   180

tgccccacag gtgtcggggc atgcaatatt atagtccttg gacaaaatga gtctcaagta   240

cagcccccca ggccacacca aggccacaag tagccttctg tccctctggg cttggtgggc   300

ctgctccagg atccctcaga cttctcatcc cgcctttccc aacttcaact tcagctctgt   360

tccttctgca ttccacccca actctatccc ccttccttgt ggggggtggg ggctggggga   420

atctctgaag ccagggagga cagttcaagt tgactgcctg agtgtcccag gcttcacctg   480

ctgctcatct gcaacccttt gtcctacccc agctttgagc ctcagtttgt cagactgaag   540

acctggactc aaaagttcca atcggtcccc ctggggggtt gcccagttcc cgccagccac   600

tcgagggtta aatggcactg gtgaccccgg tgcaacgtgc aggcgcccgg ctccgctctt   660

ctgggctctg gaggaggctc tccggctcag taggctcctc ggcggctcag tgctgctgcc   720

cctggggcgt gagaagcccg cggggggagt ttctcagaga aagagggaga ctaaaaatag   780

ccccgggggag cgggcccatt tcgctctcct tcggcccctg ccggctccct cactctggcc   840

tcggagaggg ctgtgggccg gaagggtccc tttcttgggc tgtcccagtg tccttcgatc　900

agacccaacc agactccttt tctctcccag tggctccgtg gaccctggga ccgaaaaaaa　960

cggaccagtt ggtgacttcc gagccagcag acacccagga gggagagcag aaaagcctca　1020

ggccctcttc tgttcctagt ttctgacagg gcgaagggca aggagcatgt gcccagaccc　1080

cagtgtgtcc gttactatct cttttaactc tcctctacct tctggaaagt ggaattataa　1140

atgtgggacc tggggaggtc gctggtggtc cacaaggtga aggaagggcg cgccccttct　1200

gggccccagg cagtttcccg gcggaaaccc tttctggccg ccgggtgtgt gtcgtagaaa　1260

ggctggggga gagccggcag cacctgcagg ctccaggcgt gcccggcctc agcggaatgg　1320

ccagcgggcc gggtccccag ggggcgtcca gctccttgag cggggattg tttcctcccg　1380

tagagcctcc ggtctagtgg ccccccccttc attgtcttct gccttatcac tgggtacaaa　1440

tttcctgccc agaccacaga gatcctccag gaaatgggaa gggggatgct gcgaaggcca　1500

agtaacagag gtgggggttc tgtacggcgc agccgggaag cggtggggga ggcttgcatc　1560

ctggccggat cggctcccag cccttagagg ccttcagcct ggctctccta gggcgagggt　1620

ggagagcggg gcctggctgc ggcctcttcc cgcggcgttg ccgcctgct cgccacgcgg　1680

aggtggcgtc ttccgctccg aggcagaggg ccgaggcctg gagggagtag ggcccgggac　1740

tggagcggcg atcatcctca ggcctggccg tgtgcaagcc caaggttatt ccccaaaggg　1800

cttaccagtt ggctgctctg ttgcctcccc gaagggcaaa ggatgagtat ttctggacgc　1860

cgtggtgcaa acgatggccc cctccttgaa accaacaccc cggtccaccc cctgagcgcc　1920

ggacacactc aggggaggct tcatacttgt ctagagaccg tcgttcgcgc tgcccttaat　1980

tccttgccac ccgagagttc tctgcccaga tcgcccgaac cccagaaggg ctccgaggag　2040

cttctgggt ttcaaccctc cgtttccga gggaagcccg cctctgagat tgcgcgggag　2100

ggcgggggagc atcgcattca ctgggtcagg cttgggcgct gggctgctct gctctctcca　2160

gctcctggca agctcagaag gagccgcagg gttaataggt aaccagacgg cctcccaaac　2220

ccctccgccc tttgagaact cgggagtgag ggaccctggc ggcccggagc agcatcccta　2280

ctctccctca ggaaaactag ggaagcaagt gggctacgtg gcgcgtacga cagaaacagt　2340

cggtccaccc tttcttctca tatcttcccc tcctcgctgg aaatctgccc cctctctttg　2400

atgctcagaa atctgcgcct ctggatacga ataaatgcat ataaatgtgt ccccatcccc　2460

gctacaactg cagaggctgg cggtggagag aagtcgtgat gaaatgggaa gcaggacact　2520

gagccagtgg tccctgggca ccccttgagg cctccagggg ccggaccccg caaggttcct　2580

```
ctttccagtt aaagcgactt tcctcgctct ctggtgaagc cgcgtagggc agggtccgcg  2640

ggcggagctg ggagccggtc ctgggcactc acgcctcgct cttgtctcca gcgccccct  2700

cgcgggccca gctgcaactg cacttgcccg ccaaccggtt gcaggcggtg gagggagggg  2760

aagtggtgct tccagcgtgg tacaccttgc acggggaggt gtcttcatcc cagccatggg  2820

aggtgccctt tgtgatgtgg ttcttcaaac agaaagaaaa ggaggatcag gtgagggaag  2880

aacgcctgtc agccagcggc aagttgcgcc cagagggggt tgtaagcaaa gagctggtag  2940

cggtgggagg ggtggagagg gaatgggggc cggggaagga gtttcaggga aaagcagaag  3000

tcttcaccag ttcagttttt gttctgatat tggagacttc ccaaacaatt atcttttgcc  3060

ggctttccct aaaaatccag cacacaaaat actgtaaaag tgtgagaggc attttacttg  3120

gttatgaggg aggagaggag gaggggaaga atggaagttg aggactggga aacgcttagg  3180

ggaagtaaca cacacgactt ataaaagtta gcatatttct ggcctgactc agtgactcgt  3240

gcctgtaatc ccagcacttt gggaggccga ggtgggcaca tcacttgagg ccaggagttc  3300

gagagcagcc tggccaatat ggtgaaaccc ccgtctctgc tgaaaacaca aaggttagtc  3360

ggacatggtg gcacccgcct gtagtcccag ctgcttggga ggctgaggcg ggagaattgc  3420

ttgaatccac aaggtggggg ttgcagtgag ccaaaatcca gccactgcac ttcagcctgg  3480

gcgacggagt gagactctgt ctc                                         3503
```

<210> 717

<211> 4657

<212> DNA

<213> Homo sapiens

<400> 717

```
aatttctcgc ccctgaagtt gtgaactatg attttgtttc atttcccact gacatgtgga   60

gtgtgggggt catcgcctat atgctactta gcggtttgtc gcctttcctg ggtgacaatg  120

atgctgagac gctgaacaac atcctggcct gcaggtggga cttagaggat gaagaatttc  180

aggacatctc ggaggaggcc aaggagttca tctctaagct tctgattaag gagaagagtt  240

ggcgaataag tgcaagcgaa gctctcaagc acccctggtt gtcagaccac aagctccact  300
```

ccagactcaa tgcccagaag aagaagaatc gtggctctga tgcccaggac tttgtgacca   360

aatagtctac aggaggcagc catttggaag gaaaactgct gtggttgctg ctgcttcgag   420

aaaatttttt gaaaaatcag cagttctgat gcgttgaccc ctatgatgac ctggtagtct   480

tagcagggg agccctcgac cctgaatgtg aacttgaact gcagtgcctc tgctgcgctc   540

agaggaacac ccagcgctgc ggtctggtct cagggcgcaa acacatccct gcacccggtg   600

gtggtgatgt tgggaagatg tttccctgcc atcttgagat tttttacatt ttttaaaaaa   660

ttttttgatc ttagtcactg gggcagggg tgcattatgt ctgccatttc tcaaatgact   720

acagctgtga cacttaagat tgattggaga ttttaaaact ggaggatgca tttagaggga   780

gaaagctact tccagccatt agactatgcc tttggaaggg gcaattagat ggcccgaaag   840

aattctgact cccatgcacc cttggagact tagtttcaca gactctgtca ttttgatttg   900

gtctgtggtc acgtgactac aatggataaa taatttgttt gctggaacag aagccgtctt   960

tgaattctcc aacaagaggc atcagccact gtgtctttca tttattctga attgtcccca   1020

gcgcgcattt tcttccatgc agctgattct gtttttcaca tctatactcc ctgcaccctt   1080

ctgactgaca gttcatcccc acaaaacaca ttggttttga gaggtgatgc aaaaagtatc   1140

tgtttatggt tggtctttga aattctgacc tttggaataa tgtcaacagt cacaacaggt   1200

ttcctcaagc cccatttgtc aactaaaaga gacggatctg cacctcctgg agcaagatag   1260

cactgagctt tcaacattga agtgacttgg gaaataacat ttaagcttct gggtaaacac   1320

atacaaacag tggcaaagac caagtacagt ctctcacctg tgctgtctca tgggactcaa   1380

tggtggtgaa gaaatctcaa tcggacacca gaggtggggg caactctgca agctcacctg   1440

ctggacgtga gaatgttgga acgttccagt tggaaggttc ctatgcctag cccgtgtgcc   1500

atttcatggc agatatgtaa gaaaggaaat ggccctactg tagacagctt atggggccca   1560

gaaaggcact gggctttaaa gagcgaaatg agtgtgtcat ttccacatga aggagaggca   1620

aggaaaagcc ccacaaaatt cctgttacct gctgaactcc aagctcacca accagcttca   1680

tgagctttct cacatttttcc atttccaaat aactgttgtg ttgaatcagc tgtgttaatg   1740

cctttattct ttgtttttttt tttttagacg gagtctcgct ctgtcgcgag ctggagtgc   1800

agtggcccca tctcggctca ctgcaacctc cgcctcccag gttcaagcga ttctcctgca   1860

gcctcccgag tagctgggat tacaggcgca cgccaccacg cacggctgat ttttgtattt   1920

ttagtagaga tgggggtttct ccatgttggc cagaatggtc tcaattactg ttgttgcaat   1980

agcaatgaaa ggcataagaa ttacttggtg gcctcatgag ggatggcagt ttcactttgc   2040

```
atcagttttc ccccattatc tctcagatcc acttaaggaa tccttacagc atgccgtgaa   2100

tgtgtgcaac atccttattc tcatctttaa ggtaaggagg aagtagagat agaaggaaat   2160

acgtgatttg gtgaaggcca catgcgaatt ttgtggtcgt gttagttata aaactgactc   2220

ctttccagcc tttgctctta cattatgatg cgtttctttt cctcctttgg ccttgcattt   2280

atccgaggtt ggtttcttat gttcctgtga tgtgactatg cttaagtgtt taatttagtt   2340

tgcttaaaac acacacacac acacacacac acacaaaacc ctgtgactgg agtgttatat   2400

tactatgcta tctttagctg atgatattca ttgagcctgg aaaaatacaa gccagtgcat   2460

gcattaatac ttagttagac cgcagagagc tggcattcac tcaaatgcta aacaggacac   2520

aggggtctga tttgaagccc ctcgtggcag ggcgttttct gtcctgtggt gtgcattctc   2580

taccaaatca agcaggagat cttttgcacg acgtgcaatt tgcatccacc ttcccttctg   2640

actcaggttg gcagataaac tgtccccaga ccctgccaca catggaagag acagctcagg   2700

ccaaatacag gcatgatttc tttgccaagt taatgcactg atgaccctgc agtgagtggg   2760

tgtgattttt gttttgtttt gaggtttaga aaggagactg tactttgaaa atggatcttg   2820

tttgattctg tagttaaatt tccacatttg gaatgggaag gcatctccat gccagcaggg   2880

tgccttttat atgagtgctg agggtagttt gcattgcaga gttcatgatt acagtctaga   2940

gttacttgaa atgggagatt atcagtctag tgttcatccc gcccctgctc catgtccttg   3000

tgtggctgct ccagcgagag ctggtaacta ggtagactgc tgctctaatg gggaaagggg   3060

gctttgcaaa gccgaggaat caagccagat gcgagcatgg actcagaaaa gctgagtctg   3120

gctagaccag ggctatggag atcaattttt ccaacaggtc attaggattt gggaggctgt   3180

atttctcctc caccctctta atggatggta tggctttgct cactcactag gcagttccca   3240

ctttctttag caaatggagg aaattaagca ccgatgtagc acttcccact gcctggagag   3300

aaataaacct cgcaagttat taaggagaag gcatgccaca ttggtaattt ggaagacacc   3360

aacacttacc cagaatctgt tgctatttaa aaatcaggga gaggagggca catgtcccca   3420

tttgctacat tacaaacttt ggacgagact ctcatctgaa ctaacttggg gaaacaattt   3480

ctaggttgaa gctggtaaca ctcatgtctg ttgagtgcca taagtttgtt ttcagttatt   3540

tcctctaact tgatattaat ttgctttctt tcctcaaaaa tgtaagtagg catgttgcca   3600

ttgttgtggc ttgctttgat gtatgtttgg aaagatgtgt gaatacttaa tttttatcca   3660

ttttatggaa attagcttag caattttttt ttctctttta agaatcaaaa tatggatttg   3720

atactaggaa cagaatctgc tctttatttc attccttttt tgtctcttct gcttcctctg   3780
```

cccctcccc agccacgcag cacgggtgcc agtgtgcatg cgtgtgctgg gggccaaatg 3840

acagaacccc ggttgaaagt ccgcttgtaa aagcacaagt gagaggcagc atcaggcccc 3900

tggagggctg tggtcctcgg actcggttct ttcctgtccc ctggccgtcc tgtcatccct 3960

gtgtgctgca gcatcaccac ggcctacttc ccaatatcca caaagcttcg cctttgcttt 4020

tgcactctct tttacatttt tttacttctt ccttttttct taagttcgga tccaagtttg 4080

tcttcttatc catcaccatg ctccctgaaa gccttttga dattaagaaa ttttcttacc 4140

aggaggcaac tttccgtctg tcctaaaggg aagtgggtgc tggatttatt agatattggg 4200

ttcctggatt aagatgactt cctcacatag cttggagtct gcagtttctc agttagaagt 4260

gttctatatt tcttttttgct ccattttagt gcgctgtgct ttgtataagt ggtctttcta 4320

tgggcagttt caccttccat gaaggcttat aactcaacca ctactaccca ttcagaagag 4380

cagaaagcat ctgctgtgtg agcgttcata tgttacctaa tgtgtatttt gctgtcgtct 4440

cagctgatag atgtcagtga gtctttctga ctaggtttat tggtgttgat aagaaattaa 4500

aaaaaggatt cataacgtgg tgattgtgtc tatcatgtat attttaaatt tctgaacgta 4560

ctttcattta gctgttttttc tttgctttct aaagatgtat aacaatcatg tatatgtatt 4620

atattgaaga ataaacatgg accttattta tcttttg 4657

<210> 718

<211> 4875

<212> DNA

<213> Homo sapiens

<400> 718

ttgatgccct gtggtcgtgg tcttcacgta aacgctattt gtgttccgaa tcttagagtt 60

gtgtgggaag gggatccgag gagacatgag gatcataaaa gctgcccgat gtcaccatgg 120

tcgcgtgcct gtggggctgt aaaggcagac ttagacaaga gcaggggact gcagtgggct 180

ctgagccact gtgtgtcagt ggaaggatga ctaagagtgt gagaaccact gcatcgctag 240

aaccgcacca gccttctcat gtggtccagg aggcccggca ccgccattac cacgaagacc 300

aaaatgactc tccccaccca cagccaaacc agagtcgtcc tgtgcgctct gccctgtcat 360

cagaggggac tgtcagctgc cgtctgacat cctgcgtgct ttggctctta ccccagtctg   420

accagtgtga ctgtacagga tccctcttct tggccggtga acagcgcact tagtgccctt   480

gcagggagcc tgagaacgag caaggtagtg ggtgcgggga gtgagcaaaa gagagactca   540

gcgagacagg atgtgagatg gaggtggaga gcaagactgc gagaggaaaa tgacaagcag   600

agagaaaggg atactaagag gaagatggca aactgaaagg gaaagagact gtgtgacagg   660

gtgagacaga gtgaaagaga ttgagccaga atgagatgca gaaggggggta gggaggggagt   720

gagagggaga gagacaggag agagagagag agagagagag aaccccggga agcaataggg   780

accccccagag tagaccctgc catcacttgt gcctggaaga ggctcttgca taggtgacgg   840

gcattttcag gatggctgcc gggtggagtt gagcagtgag gctggcagga gtcacatctg   900

ggcctgaggc aagtagccca aactgaaaag gcaatgctct gatgtcagcc tcatccatct   960

aggcttagaa caaggatctg tactttgaag aatcccagcc tcccctgcaa gaaagagccc   1020

aagattgtta ccatttcaga cctcaagagc caaagcaaga cacaccagtt cctaaccaga   1080

gggacttgag ttagctctag gaaatgggaa gattcaattg atgtaatttc aacttctttt   1140

cctcagaggc gtccagcagc acaggctgcc aaaaaagtgc ccatgccctt gatgtctaag   1200

caaagtgact gtaaaaatag aagtagtgtc tcagaagttt tttctctgcc cctgtctctc   1260

ctgaatctga accaggctgt ttaaaacttg gcatcactca gcttgcaaag ctaccatttg   1320

tttctagaaa gtgaaagttt tttttggtaa gccctctgaa actcagtgtt gcctaaatat   1380

ctgaagacat gatttttctc agtccgtctt gggccccccgt gcccagtctc tctttgctgc   1440

acccgttctt cctctgcact aatatgtcct catatccagc tcctttccat agatgtgatt   1500

gggtttctgt tcatgtctcc actgttcaaa agatttgttt cctccaccat tagtatttga   1560

gggagaactc ccaaaaccta gggaggggaa agcaagtggg cagagaacta gaaatgagat   1620

gagaaaaatc gctagctatt cctggcaagg aaaaacatct ttacagtaac aggagtgttt   1680

aacagacaga caaaatacct tcaaaatatg caaatctctg tttatcttac agaattctac   1740

agggaacaaa tccgtagcat tagcaattat gacttagctc agaaatttt ttccttcctc   1800

gtcataatta taaacatcag tatcgcttag agcttcacgt taaaatgttt ttctcctact   1860

tcttttaaga gttatttgtt taacatgctt ttattatcct agatgatgtg atttgggaag   1920

aaagtattaa ttctcttatc agctctgttt cctttccagt tgttcagaga attgagctac   1980

actagtagtt tatgaagtaa gaggtattaa atagagagct cactgctgat cagattgagc   2040

cacttctgaa ctgtggctat ccaggcaaag gggattgaca gcttagcatt tatgccgcaa   2100

atgtgttgga ataacatggc aacagaatca caggcatctt tacttctctc acactgccgc 2160

ctcccagcta gtgcctttgt atcattgaaa ttttttgagaa acaagatgcc ttaactcctt 2220

atccaatgtt gcttgttcag tctggctttg tgaatattgt tccttgagtg tggttttgaa 2280

ggtggctgtg ttttattgca ggtattgtat aggtcatgta tattctatca ttcattcatc 2340

cacttaggca ctcattcact cattcaaaat attgactgtg atgtgccaag tcctggcaga 2400

tttgggtacc gttgtagctg agtatttcta attctcttaa acacattgcc tacattatca 2460

tgttagaata atgtcaaata taaccttgtc acaacaacca gtctgtcggg tgtccttggc 2520

ctacagtgct aatctgtgat tattttctaa tttgatgctg gcaactcaca tagaaccact 2580

gggtgagggg atggttctgt cccatctggt cattgattcg tttattcaac aaatgtccac 2640

ctactatgtg tcactgtgct gggtgctggg ccctctccct ttgacttgct ggataatttt 2700

agaagcttgt ccagtctcac tggttttttg ctgtgtatgt tttctgagac acttccagtc 2760

ctccgtttga tcacagcttc ccatctctgc ctcttgccca tcacttgtgc ggattgtact 2820

taatcactgt cctgtatcca catccctcca cacccagcag agagtccata agtagccatt 2880

tcagtagtac cctctatacc atctctccct cccttatccc ttcttctgcc actgcagtgg 2940

ctctcgcaac ccccaactcc atctacgatc acatctactc ttcttcctaa gggaatgagt 3000

atggctggta gctctcccaa aaccatgctg agtccctgta tgcagttctg catcctagac 3060

gtaactgagc aatccctcat gggctcatca atcccagtgt ttatggtttt agagtcctct 3120

cattcactac agtgatgatc ctagaacttg accaccaccc ttgagcctct gctatatcct 3180

caccagattt cagcagatga tttgattctt cttttactat acagatggta caactcgtta 3240

atcttaattc ctctaaattc agaatctcca acttcttctt ctttgatcac ctccttagtc 3300

tatgaggagg aagaaattag caactcactg accagctgcc atactaggga gcgtgattat 3360

ccaagcctag actctccatc cttccattgc ccatgagcta tccacctatc catccatcca 3420

gcaaacttct gctgagtgac tcctaagtat ccagtactat taggctttac tgaagcagta 3480

atggggtact cctggcctga gcggagagcc atctggtcac tatcatattg caatgaacct 3540

gacctttggt cagcataaaa ataaaatgca tctcgagtac tttagaatga aatattttct 3600

tttttttttt ttttttgag acggagtctc gctctgtcac caggccggag tgcggtggtg 3660

caatctctac tcactgtaag ctccgtctcc tgggttcagg ccattctcct gcctcagtct 3720

cccgagtagc tgggactaca ggcgtctgcc attacactcg ctaattttt tgtattttta 3780

gtagagactg ggtttcatca tattagccag gatggtctcg atctcctgac cttgtgatcc 3840

acccacctta gcctcccaaa gtgctgggat tacaggcatg agccaccgca cccggctaga   3900

atgaaatatt ttctttttaa aggtaatatt tgaactgggt ttgaaagcat tcataggaat   3960

tcaggtcaat gtaggaaaaa aggtgcctcc aagaggagga gaatagcata atgtaggtat   4020

gaaagagtaa ggtatgtttg gaaaacagca actaactagg aaaagtgctg ggttcgtgga   4080

ggaggaagca ggaaagaagt ctgggaaatt atacaggaga cctgttattc cattcaaagg   4140

agttgagact cttttttagaa tggggagct tggggagctt tcctggcaag ggagtgactt   4200

gatcagaatg gttttgttt ttaatggtgt ttgtggttca gctgaaggtt ctttgaggat   4260

ttcaggagaa agatgatgac agctggatga tcgtagtggt gatgaaaga aaggggaaaa   4320

atttattcaa tatataagat taagaattgc caggtcctga tgaaagactg aacatcaaag   4380

gagttgacag tgacctttcc ctgatcaggc aaagtagcag gttggaggaa agaatgttga   4440

gtttgggagc ctgatgaact taagtggtag aaataatcgg taaaggagag aagggcttgt   4500

tggggatcca atctgtgatc atcaatgagt aggcaaaggt gaagtatatg tggagggcaa   4560

ggggaccttg aggaacacca acagcgaatg ggttggggaa gacagtgaag tatttgaaaa   4620

agaccaaggc tttgggaggc caaggcaggc agataacctg aggtcaggag ttcgagacta   4680

gcctggccag catggtgaag ccccatctct acgaaacata caaaaggtag ccaggcgtgg   4740

tggcgggcac ctgtagtccc agctgctctg gaggctgggg catgagaatt gcttgaacct   4800

gagaggcaga ggttgcagtg ggctgagatc gcgccactgc actccagcct gggcgacaga   4860

gcgagactcc atctc   4875

<210> 719

<211> 4004

<212> DNA

<213> Homo sapiens

<400> 719

atatcccatg tacttatatg ctctgtggaa catgttcttg taaaattaac atatactcta   60

ttacctcctt attaatggga aattctgagg gactgccttc atccatcaca ataagctggg   120

cccctcagcg ttccccgccc caagctgaca aggcaagttc tgaggtccac agggagccag   180

gagggaaggc cgtctctttt catccatgca atgcctacac tatgcagaaa agggaggacc 240

tcaagaccaa gaagcgatta tgttgcagcc cttcttctgt gaacacgctc aaaaacacac 300

gaatgttccc gctaaatcag tgactccatc aaccttgatc cacaggcctt ggctgtggca 360

gagggactgc aggaagccac gtggctgaga acccaccttc ttattaccat gttgggcagt 420

ttctaggagt gcttcctggt ttcagatttt cttccctttc aaagcagggt gggggtggtg 480

taaagccctt gctcgggcta ggagccagat acgtggcagc ttaattttcc ccattatgca 540

ggacaaatac caagaagaat tcccaggtgt gtctgcagcc gtgaaaatgt gacatgagtc 600

acagtgtctt cggaggaaat gaaagaccac aggacgggga catggcatca tgaaaaaaga 660

tgctttgtga ttttcaacat atggtgacac ttttcctaat ttagaggggg aagctgggtt 720

ttgagttttc ttttatcctc cctctttgtt aaaagcaaga gaaagaagat ttaaagaaca 780

tctgtgtatt caaatgatag aaatagaatt atacactttc aaaaacaagt tctagtattt 840

ttgtctcttt caaagatttc cgaagcctat agatttctct cgtgtttgtg agagcatttc 900

ctctgagacc ttagacatag tgttgaagtt gaaatggttt ttgtcttttt cccctttctg 960

ttaacccagc ccccacttca ttctgttaat ctcctttaat tggacttaag ataagactga 1020

gtatgttcaa tatttttatt gaattgagtt ttatgtttcc agtctggatt tatagactgt 1080

taaatagaat gttttacgtt tctctctctc gcaaagaaaa taacaaatac gtgtgggaca 1140

gagccatcag tcaattatat cagtggattg ttggcaactc acaggggaa aaaaaagagc 1200

attttcactc tactcttagg ggaaagcaat tatatttaag agcagtagaa agccaaaact 1260

agcctggaac ttcaaaacgc ctttcttgac tgaccaagaa aaggtacagt gactacaatg 1320

acaaaccagc ccccagctct tttagaaatc taccctgcct catgctaaag agaaagtaag 1380

tgatgtttca gcctcggcga ccaggcagga atagaaaaat acattgacag tagttggata 1440

gaccttaaaa ttaagtaaaa atttcttaat atacaagatc tcagttttcc cacaaacctc 1500

ctttctgtcc agaaatttcc atgccattta ctgcctgatc atgtcaggaa tgacgttctt 1560

ccttgttctt gattttcctt cctggaatgt tttaatcctg cctctccaga acactttcc 1620

ctacttcttc taggccctac tcacagcaat gtagctgaca catagcatta gcgtgcaaaa 1680

cctcaaatcc tttctgactt ggaacttcac ccaggaaaga cctctagcaa aagtgctggc 1740

cattgtgtca caggacaaac ccctttcaaa gaacaaagcc atcatcatct caaaagccac 1800

agtcaccacc tggaccttcc gtcctgagga aaggaatctc caccgaatct aggggggaaga 1860

cccccccacc agtctgtgca aaagatgaag aattgagtat gcacctacct gtgcccttcc 1920

atttccacct cttcccacct tccccgtttc tttttccgtt catttttttt tccactttaa 1980

agacatccaa ctttgccttg gggatgagca gaatgaaatg tcacttacct ataaaaagag 2040

acagaagaga aagccatgca tcacattaca cacaagttct ttgaaatcaa ggccagcttc 2100

cgactttgaa actgtaacaa tgagtgaata ttattttttc atcctacctt tctatattta 2160

atgaaactca ggagttcgca agtagcctat ccccagggcc cagtctccct tcgtgatttt 2220

cctttgttt ctttgcctcc tccgtccctc ttcaccaccc tagccccaca ccctctgtcc 2280

ccgcttcatg gatgaaaggt caggaaggaa taagggggga ggggtgcaca gacccagaga 2340

tcaaggccag ccctcagatg tgggcagcaa ggtttcgagg catgaggagc cgcttttcac 2400

ctcttttctc acaggccaca gagatgggac ccagggtcag tgccggctgg tgcctctcgg 2460

gaggagggag gaaggtcagc tccctgcagg gtgattttcc acctggtggc ttctgggctc 2520

tttcaaatga ctctgctctg agtcttcctc ctctctccct ccctcaccct cacccccctcc 2580

gccctcctgg tttgggtgtg aatgaattca cccaaggtct ccatcccccct cttcatcctg 2640

cagcatctgt ctttcagacc tgcttctaca gaaaacctca ttattgcagc accctgaggc 2700

caacaaccac ctgaatgggt cattgtgttc agtcccctgc ctcaatacat gatgcaaact 2760

ggcccacccg agtcctacgg gacactttga gaaccctgag atactgagtc cccgcccttgc 2820

ccggctcctg gccgcagagg ctccctgtct tcatgcaaca agctccttgt ggccgactga 2880

ttcggttctg tcggctgtaa ggaagccagg ctctgagcat tctacttgca agaacagccc 2940

ctcacccacc acgctatgta gcggatcctt cacgtgctca catattggaa aattggcttc 3000

agggtcctgc cagtgtcttc ttcttcttat gcctgaataa ctcatttcct tttagactct 3060

tcttaaaggt ttcagttttc catctttcct cctccaagct cctctgagac cctccgtgga 3120

ggacagctca gagctaagcc ctggagagaa aagcagccac gtgtcccccg attctgttgc 3180

tgcatccccc aaagagattt ccaaccaaga tgctctgcca gaaatggaat tacggtcaaa 3240

tattgcatcc cgatcacatt ggtatgttaa agacttggag agggttcgag gtaaagatct 3300

atgctgaaac ttttcctaac ggtatttgac tcagaaatgt ttcttgctat atataaacta 3360

aaacaccgta cttcagaagg atgactactt tttctctcat tatgaatgta aaactaaata 3420

caattgagtt ggtattatca caagcagtgg ccagaggacc ttgaagtcga tggcccggcc 3480

accatgccca gctaattttt tgtatttta ttagagacag ggttttgcca tgctgtccag 3540

gctgttctct aactcctgac ctctggtgat ccgcccacct cggcctccca aagtgctgga 3600

attacaggcg tgagccaccg cgtccggccg cttacacctt ttaaagcttc tgattctgct 3660

```
gtctctgctc tgtggctttg catctgggca agtttctccg cagaccagga acctctaagt   3720

cggggggagga aagagaggtc gctgaatcag agcaaggcat gccgtcctcg tctgcatcct   3780

ctattactct tgaataagag agaatgcgag gacaaacggg catcagcata gtgacgtgtc   3840

catgtaggtt cacgaatgta agagctgcac cacgtgggtg tggaatgtta acagttgggg   3900

aggctggggc agtgggaaaa ggggtctatg ggaatgctct gtattttccc cttattttac   3960

tggaacctaa aactgctcca aaaataaagt ttatgaatga aaac                     4004
```

<210> 720

<211> 2071

<212> DNA

<213> Homo sapiens

<400> 720

```
ttttccggct cctaactccc gtgctgcttg ttagctttct gttacgacgt tggctgtgtc     60

gggcctcggg cagcctctga ccttcccgcc tgccctttac ctgccccaaa gcaggactct    120

aatgttcccc gcctttctga ctgtgggtct caggaccctc tcctgagagg gtcccccact    180

ccccggggga gaatgctgac gtcatgtttc cctgagcact gtgagccacg ccagcaaacg    240

gggttgtggg aaccccaact tgaagccaat tggtcagttc cagaggctca gacagtttac    300

cggtatgtgt cagagggcag ttttggggac ggagccctca acccgtgcga tcggacgcta    360

ccccgggtcc atactgttgg aactgaatta gaaggcagca gcgacccctg cgtggtgcat    420

ggggaagacc cttcacaccc accttctgtg tggacaactg ttgtggtggg aggaggagaa    480

acacggtgtg agagtttttc cttaaaacaa aggggcagca ggaaactcca ggagttccca    540

aaaaaagaaa cgcagtcggc ctccaggcat accaagcact cttgcttcga tgaccgtgaa    600

agaaacgcca gtttacctgc gacaccagca tccacacctc aggccgagga gcaggagctg    660

tggagggcac gcggggcagg ggaggtctct ccacactgcc catggggcgt gtgatctggc    720

aatgccacca aatctacaag tggacacacc ttcccacgaa cccacccctg ggctctacgc    780

caccctcacg caccccagtc ctctgcccca gcattttcca catggctttg ctggcagagt    840

gctgggaatc ttctggaggc agtgggtgtt cgccgtcccc atgggtgact gtctcagagg    900
```

gtgcagagtg gccacggctg cagctcatta gagcgcgccg caccatggac acgcagggca　960

ggctcaccca gaacgctctg gacaggtcag tgaaaatggg agcttcgccc aggggacgtg　1020

ggctcagaca cacgggcaca tcagtcccag ggcccatcaa caccttgaaa gccaaggcca　1080

agacccactg accctgagaa ccaccacaca cctcacgcct gtgcctctgg gttggcaaaa　1140

tgtggaggag ccatgccagg gcacggagcc cccagcacac cctccagctg cccctgcgcc　1200

ccgccacaca cggtgtcagt ggtcagagcc tcgtggagac ggcagcgacg cagggacaac　1260

tggacaaaag atcgagcctg acgtggggct gcgtgaggtc aggggtgtgg gcggcaccga　1320

cgaggcttgc tggctttcag gagaccgggg acgacaggct ggggtggggc ttccggtgag　1380

agaggggtga gggcacggcc aagggcactg agaaaacagc tggcatctga ggaaggaggc　1440

ctctgaggtt tcgggataag gaggggcgca ttcttcggat ggagactgcc tacccctcga　1500

ctctgggtgc aggctgccca gggtggggca agcggccagc cagcctccaa cctgcccttg　1560

aaacaggagc tgccgaccgg ggccggccgt gctggggctg ccacccacac catggcacag　1620

aagccacctg cacgctccga tgcactgtgg ccagtgctcc tgcaggtggc agagctgtcc　1680

ctggagggtc agcctggcac cacctccacc tctcaggcag ggccatgggg gcggtgccca　1740

gagaacctcc atgaatgtgc aaagagagag aggagacaca gagaacagaa agaggatctg　1800

gaactcaagg acgccaccgt gtgggagccg gccaggcctc catgattcac ggtccagcta　1860

ccaaaacagc cacgccaagg cggcctccct tcttcctgtc aggaccgccg cccaaactac　1920

caagaaggaa acccatttct gatcctgcaa ggttccataa gagaattggg gccgggcgcg　1980

gtggctcagg cctggaatcc cagcactttg ggaggcagga gggttactcg agcccagaag　2040

ttccagacca atttgggcta catacatggc c　2071

<210> 721

<211> 3394

<212> DNA

<213> Homo sapiens

<400> 721

ttggatgtat taaatgactg gccaattacc aacatgttaa taaaggaaag tttccagtag　60

```
tgtggaaaga gacctatata atgtcccatg ggtgggtgcc ctttgaccat ctacccctaa    120

atcccaatgc agcatctctg tagctcccca gaccatggca ggggaattcc cttccctcat    180

tcaactagtg cctgttcttt ctctctactt gtccccaccc ccagtgtttc ctgtttgtcc    240

aacaatgagg aggccagcgt aaggccacac tgctagctca tgcaggatgc atagcccctg    300

agtaaaccat aacagagcca taagcctggt atttaatcac aggaacatca gcaaaaggaa    360

ctgcttaatt gttttttatt ttcccttctt tcacctgttg gaaatgactg cgtgctctgt    420

agatccaaaa caattgcatg gatgtccacc gaggggatat gtgtttcttt cagggctcaa    480

agtattttca cgtgtttcat caaactcctc taccagccaa aagcattcca cagaacttga    540

gaaattccag agtagtcagg agccagctcc tcatcacttt ggaatagcaa catattttaa    600

agttaacaag gaaaaaatat tgagtcaaaa cacgttagac ctgggcctgc cttcttcaga    660

aaatgactca cagaatccaa gtagtggcaa agtcattctt tgtctttggg tccctggaaa    720

tcatgaggat tccatccaga cttcttatct ggcgcacata aaaggaaatg cagtctgttg    780

tagcaagatg aacacgggct ttggaatcag atgaagctgg gactgagtcc cagctccacc    840

agtcactagt tatgtgacct ctgacaagat atttaatctc aataagtcgt agtttctgcc    900

tttgtaaata gtaaacagca atacttacct tccaggatta agagagaata catcgattgc    960

attcagtgta agacccactg tattgtgaat gcccaaatca tggaatccat tatgattgat   1020

ctttctgaag ttattaatgt tctttctttg catggaaacc aggaaacctt gtttactttt   1080

caagcaccat cacaataaca gatgtgtcat cttatttttc tccaggttgg tttcatcgac   1140

tacattgtcc atccattgtg ggagacatgg gcagatttgg tacagcctga tgctcaggac   1200

attctcgata ccttagaaga taacaggaac tggtatcaga gcatgatacc tcaaagtccc   1260

tcaccaccac tggacgagca gaacagggac tgccagggtc tgatggagaa gtttcagttt   1320

gaactgactc tcgatgagga agattctgaa ggacctgaga aggagggaga gggacacagc   1380

tatttcagca gcacaaagac gccttgtgtg attgatccag aaaacagaga ttccctggga   1440

gagactgaca tagacattgc aacagaagac aagtcccccg tggatacata atccccctct   1500

ccctgtggag atgaacattc tatccttgat gagcatgcca gctatgtggt agggccagcc   1560

caccatgggg gccaagacct gcacaggaca agggccacct ggcctttcag ttacttgagt   1620

ttggagtcag aaagcaagac caggaagcaa atagcagctc aggaaatccc acggttgact   1680

tgccttgatg gcaagcttgg tggagagggc tgaagctgtt gctgggggcc gattctgatc   1740

aagacacatg gcttgaaaat ggaagacaca aaactgagag atcattctgc actaagtttc   1800
```

gggaacttat ccccgacagt gactgaactc actgactaat aacttcattt atgaatcttc 1860

tcccttgtcc ctttgtctgc caacctgtgt gcctttttg taaaacattt tcatgtcttt 1920

aaaatgcctg ttgaatacct ggagtttagt atcaacttct acacagataa gctttcaaag 1980

ttgacaaact tttttgactc tttctggaaa agggaaagaa aatagtcttc cttctttctt 2040

gggcaatatc cttcacttta ctacagttac ttttgcaaac agacagaaag gatacacttc 2100

taaccacatt ttacttcctt cccctgttgt ccagtccaac tccacagtca ctcttaaaac 2160

ttctctctgt ttgcctgcct ccaacagtac ttttaacttt ttgctgtaaa cagaataaaa 2220

ttgaacaaat taggggggtag aaaggagcag tggtgtcgtt caccgtgaga gtctgcatag 2280

aactcagcag tgtgccctgc tgtgtcttgg accctgcccc ccacaggagt tgtacagtcc 2340

ctggccctgt tccctacctc ctctcttcac cccgttaggc tgttttcaat gtaatgctgc 2400

cgtccttctc ttgcactgcc ttctgcgcta acacctccat tcctgtttat aaccgtgtat 2460

ttattactta atgtatataa tgtaatgttt tgtaagttat taatttatat atctaacatt 2520

gcctgccaat ggtggtgtta aatttgtgta gaaaactctg cctaagagtt acgacttttt 2580

cttgtaatgt tttgtattgt gtattatata acccaaacgt cacttagtag agacatatgg 2640

cccccttggc agagaggaca ggggtgggct tttgttcaaa gggtctgccc tttccctgcc 2700

tgagttgcta cttctgcaca acccctttat gaaccagttt tggaaacaat attctcacat 2760

tagatactaa atggtttata ctgagctttt acttttgtat agcttgatag gggcaggggg 2820

caatgggatg tagtttttac ccaggttcta tccaaatcta tgtgggcatg agttgggtta 2880

taactggatc ctactatcat tgtggctttg gttcaaaagg aaacactaca tttgctcaca 2940

gatgattctt ctgaatgctc ccgaactact gactttgaag aggtagcctc ctgcctgcca 3000

ttaagcagga atgtcatgtt ccagttcatt acaaaagaaa acaataaaac aatgtgaatt 3060

tttataataa aatgtgaact gatgtagcaa attacgcaaa tgtgaagcct cttctgataa 3120

cacttgttag gcctcttact gatgtcagtt tcagtttgta aaatatgttt catgctttca 3180

gttcagcatt gtgactcagt aattacagaa aatggcacaa atgtgcatga ccaatgggtt 3240

tgtatgtcta tgaacactgc attgtttcag gtggacattt tatcattttc aaatgtttct 3300

cacaatgtat gttatagtat tattattata tattgtgttc aaatgcattc taaagagact 3360

tttatatgag gtgaataaag aaaagcatga ttag 3394

<210> 722

<211> 2066

<212> DNA

<213> Homo sapiens

<400> 722

aggcgcagag	ggcggcggga	gcagaaggac	tggttgagga	tggactccac	ctctgaaaac	60
ggccgcagga	acaccaggtc	ctcattgatg	gagtagatct	tcctccccac	ctgcaggcca	120
gccacctggg	tagggacggc	agaggacaga	cgtgcacacc	agttactaag	ctccttccct	180
cctcaccaag	gaagctcaaa	tgtgttcagc	agaagggtgc	tggcccaagg	gatccagcag	240
gactgggtga	ctgcgtgctg	tctgtgggcc	tggcgaagaa	agatgaagac	ctgctgaccc	300
gaaccaagat	tcacaactgc	ctccttccaa	ccgctcacat	cactggcaag	gtcaacctag	360
ccgctccggc	catgggtatg	tcgctccttg	cagcccaaag	cattcctaat	tgccacaggg	420
gcaagctggg	ctccagccag	cacggcaggt	gcatctcccc	cacccacctg	cacacgcccc	480
aggcaaagcc	ggaaggcccc	agggctgaat	cctcggccag	ccacaccctc	actctcctaa	540
cctatcctcc	tgtaggcttt	gcatcagaca	gcaatgagct	tatcttattc	aagccactgt	600
gactggttgc	agaaaactga	gacacctgct	tttttcctgt	acctccccac	aatgtccagc	660
agagggcagt	ggtggaacac	accaggagca	cagccccggg	actctgcact	cactcccagc	720
tactgtagcc	actgcagaca	gtgggtcctg	gactcagttt	ctccacgtga	gcaatgagag	780
aagaggagtc	agcgatcatt	ccagaatctc	ctgggctggg	ctgcctcaag	gagggtgaag	840
agagacaccc	cgctctgcca	cctgcacacg	gtccctgcca	gctcccccga	gggcctcacc	900
tcagccagcg	agcccctctg	gacggacttc	accaccacag	ccttgttctt	ctcctcgatg	960
tcaaagccat	agtcctcctc	ctggggcagg	atctgggggc	ccagggcaga	aggaacccgg	1020
tcagggagcg	aggtgggcct	acggccagcc	ccaccgtggc	ccccacagga	ccatgacctc	1080
gtcccaggtc	tagtagggaa	gtggccagat	ccaggtgggc	gagacagagc	aaaacgcaaa	1140
cagcacctgg	cagagccagt	gctcactctg	tgcctgccac	tggcttaacg	aatcacacgg	1200
atccaaaggt	gtccagccac	caagaatgtg	gagtcaggga	gtttagggag	gagcggtccc	1260
accccagggc	aggatggcag	gcatgctaga	aacaggtctg	ggggttcccc	agtgcggggg	1320
atacagggaa	aggcactcat	tcagtcaaca	gacattgatt	gagatgctgc	ccatcacacg	1380

```
ggccaggcag ttctcatggg tgctggagac accatctaga acaagacaaa caagcccagc   1440

cctgcttagt gcgggaggcc aactataaac aaataaacaa aagaaataca ggatgtgatg   1500

cagggagtgt acgtagttgg aattaaagca cttaatggga tagggcacgg caagggggca   1560

gagaaggtgc tatcggagct gaggcctgaa cgaaatgaaa aacaaaactt cataaagagt   1620

ggaggaacat gctccaggca gcagacacag cacgtacaaa ggtcctgagg gaggccccaa   1680

ggcactggag gataagaaaa gagatcagga ggtcaggcgc aatggctcac gcttgtaatc   1740

ccagcacttt gggaggccga gacgggttga tcgcttgatc ccaggagttc aagaccagcc   1800

tgggcaacat agcaaaaccc tgtctttata aaaaatacaa aaattagctg ggtgtggtgg   1860

cgcaggtctg ttgtcctagc cactggggag gcagaggaga ggagagagga gagaggggag   1920

gggagaaagg ggaagggagg ggagagaggg gaatggaggg gaggggaggg aagaaagaaa   1980

ggggaggaga gaaagaaaag gaaggaagga aggaaggaag gaaggacggg cacgagagag   2040

agagagaaag aagaaaagaa aacaag                                        2066
```

<210> 723

<211> 2960

<212> DNA

<213> Homo sapiens

<400> 723

```
gtaccaggcc ccagaggcag cggaaaggga gactgtgggg aactaggagc aacagcaggc     60

atggaccaaa gcagtgaagg atgtatgaaa aagattagca gtgtgaatct tgacaaactt    120

ataaatgact tctcacagat agaaaagaaa atggtagaaa ccaatggaaa gaacaatata    180

ctggatattc agttggaaaa aagtaattgc ctattaaaag taatgcaagc aaaggaggtc    240

tccattaaag aagaatgtgc tactcttcat aatataataa aagggctaca acagaccatt    300

gaatatcaac agaatttgaa aggtgaaaat gaacaactaa aaataagtgc tgatcttata    360

aaagagaagt taaagtctca tgaacaggaa tataagaata tattgccaa acttgtaagt     420

gaaatgaaaa tcaaagagga gggatataag aaagaaataa gcaaacttta tcaggacatg    480

cagagaaaag ttgaattaaa tgaagaaaag cacaaagaac taatagagaa aaaggagatg    540
```

```
gaaatttcag agttaaatgc aaagctaaga agtcaagaaa aagaaaaaca aaatgaaata    600

atcaagctac aactagaatt tgatgccaaa ctagcaagag ttcagactaa atcaaaatca    660

tatcaggatt ctactgtttt gccacaaagt atctacagaa ggaaacttca gcattttcaa    720

gaagaaaaaa acaaggagat tgcaattctt cgtaatacca ttcgcgattt agagcaacgc    780

ctttctgttg gcaaagattc tcaccttaag cgtagacggt tttgagctta gcagtaaatt    840

cattagttgg tatttatta aaagcaatcg aaagtttcac ttctgttttc aatatatgca    900

tacagcctac ataacaaacg aagtcagctt taaggttttt attgaattta tttggacaaa    960

tccgtactgt atccaattct gtactgcatt cttgcttaat agtattaacc ataaaggagg   1020

tcaggtttat agggtttggt ttacctatta aaccatcatt gactatggaa atacttacta   1080

agcaatatag agacagacaa tattatcttt cccttatat cttttaagac agccactcaa    1140

gttttagaag agtatgatac aacattagag aaagaaagat acaaaggctt tattcatgtg   1200

tgatagtaaa aatcaggatg agtcttagat atacagaaga taaatggata tttaaaatag   1260

ttatatatgc ttttttagca aaatattcac gtgttaagta tttctggatc ttaaaataca   1320

aaatccactt attttattag ttaaaagtag aagattgaaa agacaaagta atattgtttt   1380

gagagataag taaagaaaaa aatggaaagc atgtctttgt tgttcttcct ccattctaaa   1440

ctgctaatta tccaacagaa acccctaggt catagtttac gtttctattc tcattaaagc   1500

aaatagaaca ctggaaaaag aaaaaaaaag acatattaac caaaagctgc aatcacctt    1560

cagttgctcc atcataaaaa atatggtttg agtcaatatt tctatgacat aaaatttaaa   1620

atctggaagc caattcagta gatttctcca tgtttgcaca aatctaattt ctattttgg    1680

ttcactaatt tggtagttta taaaaatgct ggaaatgaaa ttgtgtctag actaaattgg   1740

ggagtatgtc ctattttaaa tatttagttt gaaggtcatt ctcacttttt tgcctgattc   1800

tttcagcgtc aactggcact ggcttctgtg ggtataagct gctgacttat ttgtcaggca   1860

gctggaggca aacgtcactg acaagattca gttatgttct cctctgcccg aagtccctgt   1920

cagctacata aagatgggag gtttcttta cactgtcagg tgattgcaga ccctgttttt   1980

tcaaatatca gatgtcgaca atggcagcat cagctcctag gagccaactc tgaatctgtg   2040

ggcaatttac agagtaattg atttatacat ctctttcgac agagcttctt ttgtaaatct   2100

tgtaaatctt cacttgctgg catatctcgg ttctctgggt gaccctgcct atgctgaccc   2160

ttgtgcttat ggtggtgatg aaggcctgga ggagcaggat gagtaggagc atttggtgct   2220

cctggttgct gattctctga aagctcactg ctgccaaggt gctgatgtcc atgattgtga   2280
```

tgatgctcat gatggtaatg aggcgatgga gtttcaactg ttttatccac agtagccaaa 2340

gatacacgtt tacaaaagtc ttcatctttg agagtctgga acaaatttat aaatcacttt 2400

ttaacaagct tatagagata ggaataatgc gtgaaaaatg atttgtagag ctaacatgtg 2460

aaattccaac tagttaatta gaatcgagct ggctttgtat tatattaatg agaaagagtc 2520

tgatgttagt ctcaacacct agacatttta ttaaaggctt aaaaagaaag ccaaaccact 2580

gtacttatat ttgcagaagc aaatgaagta aactggcaaa aggaacttgg attgcaggaa 2640

agtcaaagta atatcaaatc ctaaattcag ttgatctggg ccgagcatgg tggctcatgc 2700

ctgtaatccc accactttgg gtggccgagg ggggcagatt acttgggctc aggagtcgga 2760

gaccagcctg ggcaacatgg cgagatcctg tctctgcaaa atatacaaaa attagctggg 2820

tgtggtgtca gatgcctgta gtcccagcta cttgtgaggc tgaggtggga ggatcgtttg 2880

agcctgcaag atggaggttg cagtgagctc agatggtgcc actgcactcc agcctgggtg 2940

acagagtcag accctatctc 2960

<210> 724

<211> 2458

<212> DNA

<213> Homo sapiens

<400> 724

taacgaacag caaatgctat tgttaccatg cccattttgc agatggagaa accaagagca 60

cagaggtgtt gtcacttctc caaggtcaaa cagtcactaa gtgcagaagc tcagattcaa 120

acacaggtat ctggctctag cacttactgt attgtcttgc cagtctcatc caatcgaaat 180

cacttctcca gtactagttt ttatttgttt gtttttttatg agacaggctc tcactctgtc 240

agctgggctg gagtgaggtg gtgcgatcac tgctcactgc agtctccacc tcccagattc 300

gagcaattct cctgcctcag ccttccacat agttggaact acacgtccac accatcatac 360

caggctaatt ttctttcatt tgttgtagag attgggtctc actatgttgc ccaggctggt 420

ctcaaactcc tgggctcaag cgatcctccc accttggcct cccaaagtgc tgggattaca 480

cgtgtaaacc accgtgcctg gccctccaat attagtttac tttttaatca aaagttaaca 540

```
caataagaaa aataatacaa ttaaaacatc aaaagttaaa attaaactaa tcattacaga   600

cctgtaatca ctgtacaatt tggaagccaa aacatcactg acaatttgaa cgaagtccat   660

ctattttctt cctattttta ttttgttttt gtttttattt tttatgttct tgtggagact   720

gggccttgct atgttgccaa ggctagtctg gaactcctgg gctcaagcgg tcctctcacc   780

tcagcctccc aaagtgctga gattacaggt gtgagccacg gtgccaggcc tttctcctta   840

tttttggttt attagtgacc atcccagttc tccagccctg acgctgccag ccctgttact   900

tcagatctcc atgccccacc ttgccttcgg ttttgttttt cttcatcttg cttccctaa   960

tttcacattg cctgctgttc caactccata ttcttcaata aaaatatgtc tcaccaaggc  1020

cttcaaagaa aattgaagac aagcatttcc tgcactccct cctgcctcct ccacccacaa  1080

tgttgtggtc aaccgcctct aagactgatg ttatcttctg cttctcctag tgacctctgg  1140

agtttcaaat aaccttagtc tgttgctgtt tcttgctaga tttgtttgtt tgtttgtttg  1200

tttgtttgtt tgagacggag tctcgctctg ttttaaccca ggctggagtg cagtggcgca  1260

gtctcggctc actgcaacct ctgcctccca ggttcgagcg attctcctgc ctcagtctcc  1320

cgagtggcgg gcgcctgtgg tcccagctgc tcgggaggct gaggcaggag aatcgcttga  1380

aaccacaagg cggaggttgc agtgaaccga gattgtgcca ctgcactaca gcctgggcaa  1440

aagagcgaaa ctccgtctca gaaaaaagaa aatagggggcc ggatgtggtg gctcatgcct  1500

gtaatctcag aactttggga ggccaaggta ggaggatcac ttgagtccag gagttcagcc  1560

tgggcaataa gcaagacccc gtctatacaa aattaaaaaa aaaaaaatta gctgcggctg  1620

ggcgcggtgg ctcatgcctg taatcccagc acttttgggg gcctagacgg gcggatcacg  1680

aggtcgggag atcgagacca tcctggctaa cacggtgaag ccccatctct actaaaaaat  1740

gcaaaaaaaa aattggccgg gcatggtggc gggcgcctgt ggtcccagct actcgggagg  1800

ctgaggtggg cgaattgctc gggccaggga ggtggaggtt gcagtgggcc gagatggcgc  1860

cactgcactc cagcgtggga gagacagagc gagactgcgt ctccaaaaaa aaaaaaaaaa  1920

gcagctgggc atggtggcac gtgcctgtag tcccagctgc ttgggaggct gaggcaggag  1980

gattgcttga gcctgggaag ttgaggccgc agtgagctat gatcatgctg ctgcactcca  2040

gcctagggaa cagaactctg gcactaaaaa aagaaaagaa aagaaagaa aataggctta  2100

caataaaaag caatcttgac ctaccccaaa atcccactcc cttgaagaca accacttctg  2160

ccctgttgct tctctcagta atactccttt tctgcagtta tctcttgact tcctgccatg  2220

tgtgtttggg ggagcttgag ggaagagggt gtccctgtct cattgagaga ggtgccaccc  2280
```

tgccgtgaaa agaggtgcca ccctctgtca attaggagag gagggatgag agaggaaagg 2340

ggtctccagt gtatttctcc agccggggcc ttaaatccct cttgggagat atgggatggg 2400

gtggatcgga aaataaattt ttttaaatcc ctaccaaaat aaaagctcct aaaaaatc 2458

<210> 725

<211> 2367

<212> DNA

<213> Homo sapiens

<400> 725

aagatacata tatatctggt cttcatcttg tttcctgccc cagaactcct aacacccttg 60

gaacctacag aatggtaaga gtatcttctg tatgctaatg agataaatga tgactaaggg 120

cccctaccta gccctaggtt gggggctaaa agaccatggc aagattagag gattgggact 180

ttccatccaa cccactagcc tccagagaga ggagacacac tgaaggttga gttgatcact 240

aatagccaat gatgtaatca gtcatgccta cataacaaag cttccataaa aacccagaaa 300

gacaaggttc agagagcttc caggtagctg aacacatgga ggttcctaga gggtgcccag 360

agagggcatg gaagccccat gccacttccc acatgcttac tctatgcatc tcttcatctg 420

gctcttcatc tgtatccttt gtaatatcct tcataataaa tgaaatgggc aaacataagt 480

ggagtgtttc cctgagttct gtgagccact ctggcaaagt aatggaactc gaagaggtgg 540

tctcaggaac ttccgattta cagcctgtaa gaagtacaag tgacatactt gtaactggca 600

tctgaagtag ggggcagtct gtggaactga gccctcaacc tgtgggacct gacactatca 660

actaagtgat aatcagttta gttgtctgtt atgtatgctt gcaatttttt ttttctctgt 720

tattatcctt gcaactcaac ttatgtatgt gaatgagatg aatggtgact aaggcccct 780

ccctacccctt aggttggggg ctaaaagata gtgtcagatc ttagctatgt tcagataaaa 840

tgaccattgc cttgaaactc tgcttatctt tactaacatt aagtgttttg ttgttactta 900

cattactgca actgctaggc tcctcagaaa tcttttgcaa agctaaatga tacttcagaa 960

ccatccatgc cttcagcaat gaaaaaaata acgttgtaac tcaaaagtct aacaaactac 1020

aacagactgg gtaatttata aagaacagaa acttatttgg ctgactgttc atggcagagg 1080

gcagagagag agagagagaa gaggggggaga gagagaagag ggagagagag agagaagagg 1140

gagagagaga gaaagggaaa gagggctgac ctcatcctgt aaaaaaaacc cactcccatg 1200

ataatggcct taattcacta atgagggcag agccctcctg acctcatccc cccttaaata 1260

tcacacctct taacactgtt gcactgagga ttaactttcc aacccatgag ctttggagga 1320

gacactcaaa ccatagccat ggttttttaa aaaaacaaaa aacgaaagag cttaccaaac 1380

cttcaagctt tcatctgtat tttaaactag catgagtgaa tagaacttaa gaatgaactt 1440

tttttttttt gagatggagt ttcactcttg ttgcccagag ctggagtgca gtggcgcggt 1500

ctcagctagc agcaacctct gcctccaggg ttcaagcgat tctcctgcct cggcctcccg 1560

agtggctggg attgcaggcg tgcgccacca cgcttggcta cgttttttt atttttagta 1620

gaggcggggt ttctccgtgt tggtcaggct ggtctcgaac tccagacctc aggtgatccg 1680

cccgccttgg cctcccagag tgctggcatt gcaggcatga gccaccgcat ccagcaagaa 1740

tgaacattta aaaacaactg caggccaggc acagtggctc acacctgtaa tcccagcact 1800

ctgggaagcc aaggcaggag cccagttact acaatacatc acattaacag aatgaagacc 1860

acatgatcaa ctcaaaatgg acgcagaaaa agcatttgac aaaaatcaca ctttcattat 1920

aaaagcattc aacaaactag gaatagaagg aaactacctc aacataataa aagccatata 1980

tgaaaagccc acaactatca tgttaacatc accacactta aagactgaca gcttttctcc 2040

taagatcaga tacaagggaa agatgcccac tctttccact tctgttcaac acagtactgg 2100

aagtcctcac cagagaaatt acacaagaaa aaataacata tccaaattgg aaaggaagaa 2160

gtataattat ctctattcat agatgatatg tcatatatag aaaactctaa agaaaaacaa 2220

caacaaaaac ctgttacaac tcataaatga cttcagcaaa attatgggat acaaaataaa 2280

catgcaaaaa tcagctgcat ttgcatgtac tagcaaaggc taagctaaat agaaaattaa 2340

gaaaagaatc catttataat agcatct 2367

<210> 726

<211> 2182

<212> DNA

<213> Homo sapiens

<400> 726

```
gtcgacctca ccaggcccag ctcatgcttc tttgcagcct ctccaggccc agctcctgca    60

tcttggtggc ccctccaggc ccagcctctg cctcccgtca gcctctacag tcccaacgtc   120

tgcctcacag cagattcttc acgcccagca tctacctcac tgtggacccc ccaagccaag   180

ctcccaacct ttcagcagct tctacacacc cagctcccgc ctgccagtgg cctcttcagg   240

cccatggggc tcattcctga caacggcctt tccaggccca gtttttccct tccggcggcc   300

tctccgggcc cagaacctcc tcaagtcagc ctctccagac ccacttgcac cctccgggcg   360

ttctctccgg gcccagctct tcttcctggt tgggtctcca ggcccgattc ctgcctctca   420

acaacctctt tggactcagt gcctacccat ctcctggcgg ccttggtcgg cccacagctt   480

cctcaagcca agctccccag gcccaggtca ggcctcacgg tggcctctcc aggatgagct   540

cctgccctcc gatggcatct ccaggcccca aatggtctcc ggtcggtggg ctcctccacg   600

ccaaggttgg gcctcccggc gactgccgca ggcccaagtt gtcctgaagt cgggctctcc   660

cggccctgcc tcccagcaag taagcaagct cttttggctc aactcctgcc cagctcccaa   720

ccgcctttgt aggccccgaa ctttctccag ccaagctctg agggcccacc tcctgcctcc   780

tggtggcctg tacagttcta gcactggttg gagaacagcc tctgcaggcc ccgcccttgc   840

ctcccagggg cctctccagg cccagctctt gcccccacgg cggcctcccg gggccaggtc   900

cctgctggga ggtaggcggg gacttgggcc tgggaggtcg cggtggggcg agagctgggc   960

ctggagactc ccctgggagg caacagcggg gtctgcagac gcccttctcc agccggagct  1020

gggactgttc agtcactggg agaagggatg tgggtctgaa gagcttggtt gcagaaactt  1080

cggggtctac aaacgcaggc gggagctgag ccaaaagagc ttgtttgctg ggaggtggga  1140

gatgcagcca ggaggaacag ctgggcaatg cgggaggcag aggccaggcc tcctcaagtt  1200

ggcctctcag acccacttgc agcctcccgg cgccccctcc gggcccagct cttcctcccg  1260

gctgcatctc caggccggac tctggcccga ctccaggtcc caacaacgtc tttggactca  1320

gctcctgccc agctcccagc ggccctggta ggcccacaac ttccctaagc caagctcccc  1380

aggcccagct caggcctcgc ggtggcctct ccaggctcag ctcctggccc tccgatgaca  1440

tctgcaggcc ccaaatggcc tccggtcggt gggctcctct aggcccagct tgggcctccc  1500

ggcggcctcc gcaggcccaa atcgtcccga agtcagtctc tccaggctta gctccagcct  1560

cccggcggcc tctgcaggcc caagtcgtcc tcaagtcggc ctggaagtgg gcctggaaga  1620

gcagcaagtc ggcctccctg ggcccagctc cgtcctctcg acggcctctc caggtgcaaa  1680
```

acttcctcga gtcagcctct ccaggcccag ctcctcctgc ctcccagtgg cctctttcag 1740

cccagcccag ctcatggctc tcggcggcct tcgcaggccc tgcttttgac ttttggcagc 1800

ctcttcaggc gcagaacttg atctccagtc ggcctttgca ggcccggcct cctgcctctc 1860

gaaggcctgc acgggcccgg cctcggcctc ggcctcacag cggactctcc acgcccagct 1920

agctctcgcc tcactgcggc ctccccagtc caaagctcct gcctttcggc cacttcggca 1980

ggtccagctc ctgcctgcca gtggcctctt taggcccagc tcattcctca cgtcggccat 2040

tccaggcccc gtttttccct tccggcagcc tcttggcctc taatttgttt atcttttgtg 2100

tataaatccc aaaatattga attttggaat ctttccacca ttatgtaaaa aaaaaaaaaa 2160

aaaaaaaaaa aaaaaaaaaa ag 2182

<210> 727

<211> 3516

<212> DNA

<213> Homo sapiens

<400> 727

aatctctact cggcccgcac cagcagcgct ggcgtcaggg cgcggtgggg gcaagacggg 60

tgactggcag cagggcggtg ccgggccgag aagggcgcct cacctggcgc ctcctgcctt 120

cctttccacc tcaggttgca gagagccgcc agggcaggtg gaagggccac gccccgctcc 180

cgtgagggtc accgagagac gttggggggtg gggcagggac cccaacccta gaccagtcct 240

gtagggcaca atgtctgaac aagagcgtat acaggaatgt ctgcggaagg aaataaggtc 300

acttctcatt tccaccaaag atggtttgag cccacaggag ttggagaagg agtacctttt 360

gatggttggc aaccatctac cactccgaat ccttgggtat cggtccacta tggagctggt 420

attggacatg cctgatgttg ttcgtgtctg ccccggtgca ggtggtactg taatactgaa 480

agccattcca gatgaatcta ccaaaggaat agcaagctta gttgcaaaac agaggagcag 540

ccataagctt cgaaactcaa tgcataaggg aagacctagt atttattctg gaccgagatc 600

tcatcggcga gtaccttacc gaggaagggt tgcccctatt cttccagctg ttgtgaagag 660

tgagttgaag gacctgttgg cgttatctcc tgttcttctt tctgattttg aaaaggcatt 720

```
tgccaaaaga tttggacgat cattccaata catgcaatat ggatttctct ctatgtttga    780

agtgcttaat gcggcttcag atgtcatttc tgtagagcag accagagcag gttctttgtt    840

gatgctaaag aagagtgtaa cagaggaaaa gccgagagga tgtccagcag gtaaaatttt    900

tacccagcca tttagaatga aacaagggtc atactccaca ggctttccgg tagcaaagcc    960

atgcttttca caacccactt caaacatgga accaccgaag caaataatga gcatggaaaa   1020

gacttccaag ttaaatgtag tggagacttc aagactgaat cacactgaaa aattaaacca   1080

gctggagaac acattcaaat cagttattgc acagattgga cctggaggaa ctatcagttc   1140

agaactaaaa cataagataa aatttgttgt atctaagttc ccagagggtt tgtttatttc   1200

taaactgctt ggagagtatg aggtaatttt taaagagcaa ctatcaccaa aaaaattagg   1260

cttcttaaat gtgacagaac ttgttggagc tcttagtgac attctccatg ttgagttcag   1320

gaaaggacac caagacttac tagtgtttga tgcggataag aagcctctac cacctgttca   1380

gtcagataag aaaatagaag ccaaagcttg tgtctccagt ccacctagaa attcattgtc   1440

tactgctgct gtcaaagaga ctgtatggaa ttgcccttca aaaaaacaaa aagagccaca   1500

acagaagatt tgcaagaagc ctaatctggt ggtaaagcct ttacagctgc aagtagaaac   1560

aaacaaatca gagctcaact tggcaatggc aaatcatgac atcccgccag atgctgtgcc   1620

gaacaagaaa ttatgcagac tcccaccatt agacaccagt tccctcatag gggtctttgt   1680

ggagtatatc atctctccta gtcaattcta catccggatc tatagcaggg attcgtcaga   1740

gttactcgaa gacatgatga ttgaaatgcg gcgctgttat tctaatcagc tggtttctga   1800

tcgatatgtc atgccagaat gttttattca gccgggacat ctctgttgtg taaggatttc   1860

tgaggataag tggtggtatc gggtcattat ccatcgagtc cttgagaaac aggaagttga   1920

agtgttctac ccagactttg gaaatattgg aattgttcag aagtcctccc tgaggttcct   1980

caagtgctgc tacacaaagc ttccagctca ggctatccct tgttctttgg cttgggtgag   2040

accagtagag gaacactgga catcgaaagc tattttgcag ttccagaagt tgtgcggttt   2100

gaagccatta gtggggggtag tggatgaata tgtagatgga atccttaaca ttttttgtg   2160

tgacacatcc tcaaacgaag atgtctattt ccatcatgtc ttgagaacag agggccatgc   2220

tattgtatgc cgagaaaata tctcttctaa gggtttcagt gagctcaacc ctttagcttt   2280

atacacgaca tccagtggag ggccagagga cattgtcttg acagaactgg gttatccttc   2340

ccagcagcac tattttaatg aagaccgaaa gataagtcca cagtcaaaag agagtgagtt   2400

acgtatcttg gatgagatcc ccactggaat gccatgcctg gagtcagtga ccataggtga   2460
```

```
tgatatttgg datgagaact ggttacctct acaggctaag atgggaaaag gaggtgatgc  2520

tgcctcccat ctatttactg caagccttgg tggaaagaat cagtattcat catgtaaaga  2580

aatgccacag aaggactggt gtttttctac ccctaaagat acatgggatg attcttggca  2640

gccttcaggc cttgtaaatg gaacgaaagt agaagtccat aagccagaag tactgggtgc  2700

tcaggaaaaa aatactggca caaacaggac tcaaaagcaa ctagacataa atggttcttc  2760

agattcttcc acactgccca aattggaaga attctgtacc tctcttaccc agtcagagca  2820

gtcagcagac gggagccagt ctgaacccaa caacagtcag actcagccaa agcaaattca  2880

gctttccaca gcagcaccct gttcaacaac tgcagtggat gattccgcag aaaagccctc  2940

tggttctgtg aaagctcac cagagatcct aaagaatgaa gatttttcta gcagccgtgc  3000

tattacattg tacaaagaca agcgtcaaga atctgtagac cagctgtctt tgatttttgtc  3060

ttatgagtgc cagatttctc agaagctcta cattcctcga agtacagcca ctgctgcctt  3120

aggtgctgcc gcacggttag ctacatccag gagcctccta cactggtacc ccagtgtgaa  3180

aaggatggaa gcatgaggga gggagggagg agggagaaaa acagaatcca gccgcttagg  3240

ctttgatgaa ctcccaggcc aaaatgagga gttattgaag caaaatagta tcttgatcat  3300

tgatactttt gtctttctgt gactatatgt tagctttatt atgctaacag tctactttga  3360

tgtgtaagta agtattgata tttactgtta atcttgattt ttcttgattt tattctgtgt  3420

cattttgttc acctttgttt ttaatgtagt ttaaaggaat ttgttttttt gtgtttgttt  3480

ttcttgtaca ttatcatgac tgataaatga aaattg                            3516
```

<210> 728

<211> 2926

<212> DNA

<213> Homo sapiens

<400> 728

```
caacagggca caagagttcc aatttctcca catccttgct agcactttat tttctgtttt   60

gttttgtttt tcctgatagt agctctctta gtggttgtga ggggatagtg gggtgatatc  120

tcattatggt tttgatttgc atttccctga tgattagtga tgttgagcat cttttcatgt  180
```

gcttgttggc catttgtata tcatctttgg acttgaaatg tctatttaag tcttttgtcc 240

attatattta tttatttttt ttgagatgga gtcttcctgt tacccaggct ggagtgcagt 300

ggcatgatct ctgctcactg caacctccac ctcctgggtt caagcaattc tcctgcctca 360

gcctcccaaa tagctgggac tacaggtgtg tgtcaccaca ccaggctaat tttttttcta 420

tttttagtag acacagagtt tcaccattgt ggccaggctg gtctcgaact cctgacctca 480

agtgatctgc cctcttcagc ctcccaaagt gctgggatta caggcatgag ccacggtgcc 540

cagccagtct tctgtccatt ttaacgttga gttatttgtt ttattgttga gatttactga 600

tttttaaaac ttggtcacca attaagattt ttttaaaaaa ccagtacctg gaacaagcag 660

aacaagtctc tgctggcctt ggctcatgtt gctgttctca gttcccctgg gatgtttgct 720

tccagggagg cctgggcact cctgactttg gtgacagccc tgcttgctct ctctctgtta 780

cctgtaggtt tccccttcca cattcactgc ctccgggcag gcactgttgt gttttaggca 840

tttcagtatc ccagtggggt actggataag tgcttagtta gcacctgccg gtgagtaaat 900

aatcaggtcc tgtggtctct gagggtttga cacatcaggt ctttgatctt gaccttgaac 960

tctcctagcc atgcctgcct gaagcccaac cgtggagccc aggctgaggc tgaaatctgc 1020

agaactggcc ccaagtgagt ctctccttag ggctcctgat tatgatagtt catttttttt 1080

tttttttttt ttaacaaatt tgattagctg tcctcaaatt aactcatagg agatgctccc 1140

cagaactaaa ctagctctgc aacagctcaa cagactttcc gcaggttctg cagctctttc 1200

cactcaagct tcagagaaaa gtgaaggaat attgtagatt gggttcaaaa tccccatcgc 1260

gtcttgggaa aggcagtaga gccagcagcc agccaccttt tgttctctag ggaatggaat 1320

agtccaaggc tgtgtttgtg ttctgcttct ctacatctga cccacgggtc ttccagaggc 1380

tgcatttggg tcagggacct gggttctatc ttgcctctga tgcagaccac actctctgag 1440

tctcattatt ccccctaaat gatctctaag attattttta gatttaaaaa aaaaaacaaa 1500

ctctttgcat atctttggaa agtcagttgt ttgaggtctg ttaggcttta atcacttttg 1560

ttttaaatgt gccgaggtgg tttctaggcc tgcttttcac aggtattctg tcccttgtca 1620

gttcttccca cccagttctt tttgtttgtt tgtttgtttg ttttgagatg gagtctcgtt 1680

ctgttgccca ggctggagtg cagtgccgtg atcttggctt actgcaacct ccacctcccg 1740

ggttcaagcg attctcctgc ctcagcctcc tcggtagctg ggattatagg cacgtgccac 1800

cacgcctaat ttttctattt ttagtagaga tggggtttca ccatgttggc caggctggtc 1860

ttgaactcct taccttgagt gatccacctg cctcagcctc ccgaagtgct aggattacag 1920

gcatgagcca ttacacccag ccccaaccca gtgttttcaa ataaacattc tcttcccttc 1980

acctgatttg ctgtgtctaa tctagagtgg agctgaagac acatcaccac ctctctaagg 2040

actgtgtgta acacaagagt aattgggctg taagtgaggc tgaggagtgc tgctttgagg 2100

aaagggcaca gctctcagct gagctggtga gatttccctg tgactgaagt tttattagat 2160

cttgttccct gctctgcatt tgctgcttct tcccaggctg tgggcagagg agcaggctgg 2220

tgccccggtg cccctatctg ctgcaggctg aggttcaaca agccttgtcc aaggcagctg 2280

tactgattca ttgttaggtg gccagttcct gagttttctt tgaaattcac ttcccagact 2340

gttgggtttt cctgcgagtc agactctcct tcagtagcgt cccctgcccc ctaccctcca 2400

ctggtctccc tggacctctg atcagcccct cattgagtcc tttgatgctt ctctggtagg 2460

actgacccac ctgcgtcggc tgggatcaag ggttctgagt tccattcgca ggtgctgtaa 2520

gcctgtcctt cctgttgaat agggtcagag tcctcgtgac tctgctgttt tcaagctctg 2580

taaccttggg cagtaagctg ttaacctctc tgagcctcag tttcccacac ttaaaatgga 2640

gataatggcc aggcgtggct cgcgcctgta atcccagcgc tttgggaggc cgaagtgggt 2700

ggatcacctg aggctaggag ttcgagacca gcctggccgg catggcggaa ccccgtctct 2760

actaaaaata caagaattgg ccgggcctgg tggcgtgtgc ctgtggtccc agctactcag 2820

gaagctggga cagcagagtc gcttgagccc gggaggcgga ggttgcagtg agccgagatc 2880

gcgccattgc attccagcct gggtgacaga ccaaagactc tgtctc 2926

<210> 729

<211> 2142

<212> DNA

<213> Homo sapiens

<400> 729

agatcctggt ggaggacttc gacctgcacg gggcgctgca ggacgacgcg ctggctctgc 60

tcaccgacgg gctgtggggc cgcgccgacc tggcgcccgc gctacgcggc ctggctcgcg 120

ccttcgagct tctggagctc gccgcggtgc acctgtacct gctgccctgg aggaaggagt 180

tcaccaccat caagaccttc tctggggggct acgtgcacgt gctgaagggt gtgctctcag 240

```
acgacctcct cctgaagagc ttccagaaga tgggctacgt acgcagagac agccatcggc  300

tcatggtgac cgccctgccc cccgcctgcc agctggtgca ggtggccctg ggctgctttg  360

ccctccggct ggagtgtgag atcctgggtg aggtgctggc ccagctgggc accagtgtgc  420

tgccagctga ggagctgctg caggcacggc gtgccagcgg ggacgtggcc tcctgtgtgg  480

cctggctgca gcagcggctg gcccaggatg aggagccgcc acccctgccc ccccgaggct  540

cccctgctgc ttacagggcc ccactggact tataccggga cttgcaggaa gacgaggggt  600

cggaggacgc cagcctgtat gggggagccgt caccaggccc tgactcgccc ccggcggagc  660

tggcctacag gccaccactc tgggagcaga gtgccaaact gtggggcact gggggccggg  720

cctgggagcc cccagctgag gagctgccgc aggccagcag cccaccatat ggggccttgg  780

aggaggggct ggaacctgaa ccttccgcct tctccttcct ctctctgcgc cgtgagctga  840

gtaggcctgg ggacctggcc accccctgaaa gctctgcagc ggccagcccg aggcgtattc  900

gggcagaggg ggtaccagcc tcagcctata ggtctgtctc ggagcccccca ggctaccagg  960

cacacagctg cctgtccccct ggcgccctgc ccaccctctg ctgcgacacc tgtcgccagc  1020

tgcatgctgc ccactgtgca gccctgcccg cctgccgtcc aggccactcg ctgcgtgtgc  1080

tgcttggcga cgcccagcgg cgcttgtggc tacagcgtgc acagatggac actctgctct  1140

acaacagccc cggggcccgg ccctagacca gctgggcccc aggtcaaggg ctcttgggag  1200

acagctcccg tggtgcttct ctttgctggg gaggggtctg ggcctctggt tgccttgtcc  1260

ctggggggagt cctgggcaca gcaggggggtt ggagagtcca ggccaacccct tgctggaggt  1320

gggactctct gtatatggaa ggctccaagg gcagcaggcc taagccggcc agcaggagcc  1380

tttccacatt tccccaccct cggaacccag acgcatgccc acatgtgctg ggtagagggg  1440

tccagcctgt ccagccagt gcctgaacct gtccctgaga aggaccctgt gccccaaggc  1500

ccgtggctcc tggcctgctc cctgcagtac ggagtacggg gctcaggact tgggggtcct  1560

ccacgtgtcc cagggattct ccacacgagt gtcctcaagg gcctgttggt gacaccgagc  1620

tcccccccacc ccaagctctg ctggagccaa tctgcggggc tctgccgggt gcacggctga  1680

cctggcttcg gggacgccgg ccctccccctt gggtgtcaca gcagctgggc ccacagacag  1740

gaaatgacct gacctcaaac cagatgtgga ggtgcacgag aggcgcagga acgggcagtg  1800

gctgacagct gggaaggccc tgagcgtcac tgctgctggg cggaagggcc tgtggacagc  1860

ccacccaggc ggcgggggtct tggtgggtcc agtggtaatg gtgcccctcc cctccattcc  1920

ctgtgggtgc agcccacagg ctggcgagga ggtgcctctg ccctaccctc gggtctggcg  1980
```

agggagggg caggggtgcat ccactgtgac agcccctctg ggcccacaac tccctgaccc 2040

tggaagctga gcctgctttc ctgaccctcc gccccacccc ctcctcccca gaacactcag 2100

agggacggtc aacatcagag cacattaaac gctggtgaaa cc 2142

<210> 730

<211> 1515

<212> DNA

<213> Homo sapiens

<400> 730

aattgcctca atcagcagtc attctcccca gccgtcactc agagcctgga cggtgggtcc 60

cgcgatctag cccttggcta cgcaggaacg gtgcgccccc gggtacggcg cggttcagca 120

ggcaggcgtc aggttctacc aaggcgctga aatgagccca tcagcgggta ggagcccttc 180

ccccgccgtc ccctccccag gctcgtgaac ggcgcctgat gcccgcccgg ggcgcgagct 240

ctcgaggtcg cagtgacctc agcacctgct tggaggaaaa cggcgcggga accccgcttc 300

cttcccctca gctggagcca gacctcaaac aaaaccccaa tcgatgcaca cagaaaactc 360

ctctgggcca cgcttcccgc ctcgccgagg tctccccagt ctgcccctcg ctgacgctgg 420

cgcgcagcgg ctgtggcagc acccgggaca gcggccgccc gcacttcccg cctctgactc 480

gcccgaggac gcgctggcac gcctcccacc ccctcactct gactccagct ggcgtgcatg 540

gtctgcctcg catcctcacg actcagctcc ctccctctct cgtgtttttt tcctccgccg 600

cccccctcatt catccccact gggctccctt tccctcaaat gctctggggc tctccgcgct 660

ttcctgagtc cgggctccaa ggacccttag gtagtcccgg tctcttttaa agctccccgg 720

cttccaaagg gttgccacgt ccctaaaccc tgtctccagc tcgcatacac acacgcacag 780

acacgcacgt tttctgttcc tgcgtgacac ccgccctcgc cgctcggccc cgccggtccc 840

cgcgcggtgc cctcctcccg ccacacgggc acgcacgcgc gcgcagggcc aagcccgagg 900

cagctcgccc gcagctcgca ctcgcaggcg acctgctcca gtctccaaag ccgatggcat 960

ctccgggctc tggctttggg tctttcgggt cggaagatgg ctctggggat tccgagaatc 1020

ccggcacagc gcgagcctgg tgccaagtgg ctcagaagtt cacgggcggc atcggaaaca 1080

aactgtgcgc cctgctctac ggagacgccg agaagccggc ggagagcggc gggagccaac 1140

ccccgcgggc cgccgcccgg aaggccgcct gcgcctgcga ccagaagccc tgcagctgct 1200

ccaaagtgga tgtcaactac gcgtttctcc atgcaacaga cctgctgccg gcgtgtgatg 1260

gagaaaggcc cactttggcg tttctgcaag atgttatgaa catttactt cagtatgtgg 1320

tgaaaagttt cgatagatca accaaagtga ttgatttcca ttatcctaat gagcttctcc 1380

aagaatataa ttgggaattg gcagaccaac cacaaaattt ggaggaaatt ttgatgcatt 1440

gccaaacaac tctaaaatat gcaattaaaa caggtattgt ctcatcgaaa ataataaagc 1500

tctttttcg tttac 1515

<210> 731

<211> 1528

<212> DNA

<213> Homo sapiens

<400> 731

gcagcagggc cgggcgctgg gcgggctgct gcgctgggtg ggcgccagga tgggcgagcc 60

ccgggagtcg ctggccccccg ccgcccccgc ggaccccggc ccagcctcgc cgcgcggggg 120

caccgccgtc atcctggaca ttttccgccg tgcggacaaa aatgatgatg ggaagctgtc 180

cttggaggaa ttccagctct tctttgcaga tggcgtcctt aatgagaaag aactggagga 240

tctctttcac acgattgact ctgacaacac caaccatgtg gacaccaagg agctgtgtga 300

ttactttgtg gaccacatgg gtgactatga ggatgtcctg gcctccctgg agaccttgaa 360

tcactctgtc ctgaaggcca tgggttatac caagaaggta tatgagggtg ggagcaacgt 420

ggaccagttt gtgacccgct tcctcctgaa ggagacggcc aatcagatcc agtcgctgct 480

gagctcagtg gagagtgcgg tggaggccat cgaggaacag accagccagc tccgacagaa 540

ccacatcaaa cccagccaca gcgcggcaca gacctggtgt ggaagcccca ctcccgcctc 600

tgcccccaac cacaagctca tggctatgga acaaggcaag acccttccat ctgccacgga 660

ggatgcaaag gaagagggtc tggaagccca gatcagccgc ttggcagagc tgattgggag 720

gctggagagc aaagcactgt ggttcgacct gcagcagcgc ctgtcagatg aagatggcac 780

```
caacatgcac ctgcagctgg tccggcagga gatggccgtg tgccccgagc aactgagcga    840
gtttctggac tctctgcgcc agtatctgcg ggggaccact ggcgtgagga actgcttcca    900
catcactgcc gtgaggctct cagatggctt cacctttgtc atctatgagt tctgggagac    960
agaggaggcg tggaagaggc acctgcagag cccctgtgt aaggcgttcc ggcacgtcaa   1020
ggtggacaca ctgagccagc ctgaggccct ctccaggatc ttggtgccag ctgcttggtg   1080
cacggtggga cgggactgac agcctcccag aggcccgtgg aggagcccac cagccccttc   1140
ttcttgtgaa ggaaatcccg ttttttctta dacagacact ttggtgcaga agcttctttt   1200
caatccatcc tccacaagaa ggtgtttccc tgttgttaag tgaaggaggc cgcccctgcc   1260
cccacctgag aaggcagagc agtgtctgtg ctgccaggtc ctggtgaagc ccaaggttga   1320
aggggggggc ttcctggagc cagcacccct gcctcctggt cctggcctct cccctacccc   1380
tcacatggcc acgcatgacc cacactgacc acaccctgcc ctcttcggtg acattcttct   1440
acctagtagg agtcatgccc ctgtagtgcc caacctagcc aggtagccac cactgtgccc   1500
aggcgccaaa taaaccctgg ttgggaag                                      1528
```

<210> 732

<211> 2638

<212> DNA

<213> Homo sapiens

<400> 732

```
tttgggggag aggacaccac acttctactc aatgaagaga aacattcttg tagtccagag     60
gtcttatttt tttaacacct gtgatgccac gagttcatag ggaagaggtt ccagcagctc    120
agctccttcc catcggttct cacaaagctt ctctgggtgg agcagcctct gctgcttcag    180
ttgaacccag gtacctttct cttcggcttc tttttctgat cattttcctt cacgcgtttc    240
aggaagctct ctcggctctt agagtgctcc gcgcgtgttc aatacacaag ttaattctct    300
cggcaagaat cttgcccttta acttgtttgt ttacaacaat gccaacagcg tgctggggaa    360
cactgcgact tccagttcag cgatggcaac acttgtgggg cttcctttt gaacggcacc    420
cattcccttg atgtctgcag tatcaccttt cttataggtt cgcatatacg tggccagagg    480
```

aacgactctt ttctaaaagg ccggagaacg tgtatcggtg cctctcctct ttccctttgt 540

gttcatttgg gtgcattact ggaagatggc ggttcccgcc gaaaggccac agatggcatt 600

tttaaggtga ttggttcaca tgcagttcag ctgcacacaa atgcacgtgc tcatcactga 660

ctccaggcct agggttaacc tcattcaagt cacctaatct ctcttttttt tttttctgac 720

acagggtctc actgtgtcgc ccaggctgga gtgcagtggc acaatcacag tagtgagccc 780

ctcgctgagc cgccctggga gcacccaggt gttggacaga tgcaggactg aggctgaaga 840

ggctggttct gaaaggcccg tcagctgtgc ctttgagttt cgggccagtt gggaactgtg 900

gaagggctgg gcggggaac cagatcaggg cccactctgc tattgatggg gagcacaggg 960

ctggaggggg ctggttgggg ccagcacaga atggggacgg gcagagggtt ggagagccgc 1020

caggaggctg agtccacagg tggggctggg aggggccgag gtgacttggt gtttgcacat 1080

ggggggaacga cgggtcccgg cccagtgggc ggtggtgcct gtgggaccct ggtcatctgg 1140

gatggcctgg ctctcagggc ctgaggtagt gaggctgtat aggaggggcc tctcctgggc 1200

cagaggcact gtggccccgg gactgaaaac tcatctttgt ttgctcagca ctgggcccag 1260

tgagcacagg caggtgaggg agtgagggtc ccactgttgg gaggtggggg aggcgtgttt 1320

ccagctcctg gctgagggct gcacccagcc tgctgctaag ccaccgaaat gagggtgaag 1380

agagcagtcg tggcctgtga gggtcattgc agctgcgccc acgcgccagg gtgaggatgg 1440

aggatggagc taaatgtggg tcaacccctc ctttcctggt cattgttacc tcgacttcta 1500

agtgaggaat cttctgggga aatgacagag gcccccgcag ggacactgtt cgcggctggc 1560

caggtgtgag ggggctgctg tgtcagtggg cagcagggac ggctctaaag ccaggctggg 1620

cccagcagtg ccccacaggc aggagcccaa gaagtccctg cctcgccacg tggtgagacc 1680

cttgcccaca tctgggcggg gccagcgctg ctgaagacta cttttttctg ttacaaaaaa 1740

gtgggatagc cgggcgcggt ggctcacgcc tgtgatccca gcactttggg aggctgaggt 1800

gggcagatca cgagtttggg agttcaagac cagcctggcc aagatggtga accccgtctc 1860

ctactaaaaa tacaaaaatc agcctcctga gtagctggga ttacacaggt gtgagccacc 1920

gtgcccggct acttttcgta tagtagagac ggggtttcgc cacgttggcc aggctggtct 1980

caaactcctg acctcaagtg atctgccctc cttggcctcc cacactgctg ggatcacagg 2040

tgtgagcggc agtgcctggc ctggactgtt gctggagagg caggttgtgc aagctcccag 2100

ttctctgctt cttccttgtt ttctctccac ccttggagac ctttttctgc tgacaaccct 2160

gtgtggatgg atgcatccat caaaccaggc tgctattcgc tgggtctctc agaacgccca 2220

ctggagtccc caggccgctc ccgttgcctt ggccaaaaga tgagtctcaa actcccatca 2280

cctctctctc ctcaggatgt tcttgagtcg aagaacagca ccatcaagga cctgcagtat 2340

gagctggccc aggtctgtaa ggcccataac gacctgctgc gcacgtatga ggcaaagctg 2400

ctggccttcg ggatccctct ggacaacgtg ggcttcaagc ccttggaaac agctgtgatc 2460

ggacagacgc tgggccaggg ccccgcggga ctggtgggca ccccgacgta gctgcccccc 2520

tggggggcca cagcccagag aaccagccta ggaacactcg ggatgacacc ccttatcaca 2580

ccaaggacag caagtttttt agattttatc atcagcaaat gaaagctttt cacatgtt 2638

<210> 733

<211> 1772

<212> DNA

<213> Homo sapiens

<400> 733

cagtacgaca aggagttcga gtgtaacaac agcgagagcg gctacctgta ctgctgcggt 60

acctgctact accgcttctg ctgcaagaag cgccacgaga agctggacca gcgccagtgc 120

accaactacc agagcccggt gtgggtacag acgcccagca ccaaggtggt gtcgccgggg 180

cccgagaaca agtacgaccc ggagaaggac aagaccaact tcaccgtcta catcacctgc 240

ggggtgatcg ccttcgtcat cgtggccggc gtcttcgcca aggtctccta cgacaaggcc 300

caccgccctc acgggagat gaacatccac agggctctgg ctgacatctt aagacaacag 360

ggaccaatcc ccatagcaca ctgtgaaaga gaaactatct cggctatcga tacctctccc 420

aaagagaaca cgccggtcag atcgtcctcc aaaaaccact acactcctgt gcgtacggcc 480

aagcagactc cagagaagcc acggatgaac aacatcctga catcagccac cgagccctat 540

gacctctcct tctcccgctc gttccagaac ttggcccacc tgccccatc ctacgagtct 600

gcagtaaaga ccaacccag caagtattca tctctgaaga ggctaaccga caaggaggct 660

gacgagtatt acatgagacg gcggcacctg cccgacctgg ctgcccgcgg cacctcccc 720

ctcaatgtca tccagatgtc ccaacagaag ccgttgccaa gggaacgacc ccgccggccc 780

atccgggcca tgtcccagga cagggtcctg tccccggatc ggggcctgcc agatgagttc 840

```
agcatgccct acgaccgcat cctgtccgac gagcagctgc tctccacgga gcgcctgcac    900

tcccaggacc cgctgctgtc cccggagcgg acggcctttc ccgagcagtc gctgtccagg    960

gccatctcgc acacggacgt ctttgtgtcc acacccgtgc tggaccgcta ccgcatgagc   1020

aagatgcact ctcatcccag tgcctccaat aactcatacg ccaccctggg ccagagccag   1080

acggcagcca agcgtcatgc ctttgcctca cgcagacaca acacggtgga gcagctgcac   1140

tacatcccgg gccaccacac ctgctacaca gccagcaaga ccgaagtgac cgtgtgaccg   1200

gcggggcagg gccggggctg ctgggcgtgg cagagcagag cggggggccgg gaggggccag   1260

gagcagagct tctagccttg ccactctccc ttcccttgtc ccctctgtag gaagtggggg   1320

tgggccacct ttgcccaaaa agccataccc ccggggacac agccccgatg gcctggtcca   1380

atacacttag acccaggacc aagagcaatc gctcttgctc ctccagaaga atcagtgggg   1440

agtgaggagg gggctaggcc ccattctcac ccccgaccac cttcaccaac tccctttccg   1500

tcccgcgcct ccttctcccc atccggggga ctcagctgca ggttctgtca gcagagagac   1560

ccttgcttga ctgtggtctg aagctgcctg ggtttgaagg ggccagcggg tccaatcagt   1620

gggctgaccg gataggctac tcggtctcat tcattcatct agaaccgcat cacagaaatc   1680

tcctagtgcc taaaaactgc ctgctcgctc tctcagagcc agggagctgc tgtgtccata   1740

agcacaataa tgattctttt cttgcctgct gg                                 1772
```

<210> 734

<211> 2545

<212> DNA

<213> Homo sapiens

<400> 734

```
gtgcgtccgg aagtgtctcg cagatagtaa ataatctcgg aaaggcgaga aagaagctgt    60

ctccatcttg tctgtatccg ctgctcttgt gacgttgtgg agatggggag cgtcctgggg   120

ctgtgctcca tggcgagctg gataccatgt ttgtgtggaa gtgccccgtg tttgctatgc   180

cgatgctgtc ctagtggaaa caactccact gtaactagat tgatctatgc actttcttg    240

cttgttggag tatgtgtagc ttgtgtaatg ttgataccag gaatggaaga acaactgaat   300
```

aagattcctg gattttgtga gaatgagaaa ggtgttgtcc cttgtaacat tttggttggc 360

tataaagctg tatatcgttt gtgctttggt ttggctatgt tctatcttct tctctcttta 420

ctaatgatca aagtgaagag tagcagtgat cctagagctg cagtgcacaa tggattttgg 480

ttctttaaat ttgctgcagc aattgcaatt attattgggg cattcttcat tccagaagga 540

acttttacaa ctgtgtggtt ttatgtaggc atggcaggtg ccttttgttt catcctcata 600

caactagtct tacttattga ttttgcacat tcatggaatg aatcgtgggt tgaaaaaatg 660

gaagaaggga actcgagatg ttggtatgca gccttgttat cagctacagc tctgaattat 720

ctgctgtctt tagttgctat cgtcctgttc tttgtctact acactcatcc agccagttgt 780

tcagaaaaca aggcgttcat cagtgtcaac atgctcctct gcgttggtgc ttctgtaatg 840

tctatactgc caaaaatcca agaatcacaa ccaagatctg gtttgttaca gtcttcagta 900

attacagtct acacaatgta tttgacatgg tcagctatga ccaatgaacc agaaacaaat 960

tgcaacccaa gtctactaag cataattggc tacaatacaa caagcactgt cccaaaggaa 1020

gggcagtcag tccagtggtg gcatgctcaa ggaattatag gactaattct cttttgttg 1080

tgtgtatttt attccagcat ccgtacttca aacaatagtc aggttaataa actgactcta 1140

acaagtgatg aatctacatt aatagaagat ggtggagcta gaagtgatgg atcactggag 1200

gatggggacg atgttcaccg agctgtagat aatgaaaggg atggtgtcac ttacagttat 1260

tccttctttc acttcatgct tttcctggct tcactttata tcatgatgac ccttaccaac 1320

tggtacaggt atgaaccctc tcgtgagatg aaaagtcagt ggacagctgt ctgggtgaaa 1380

atctcttcca gttggattgg catcgtgctg tatgtttgga cactcgtggc accacttgtt 1440

cttacaaatc gtgattttga ctgagtgaga cttctagcat gaaagtccca ctttgattat 1500

tgcttatttg aaaacagtat tcccaacttt tgtaaagttg tgtatgtttt tgcttcccat 1560

gtaacttctc cagtgttctg gcatgaatta gattttactg cttgtcattt tgttattttc 1620

ttaccaagtg cattgatatg tgaagtagaa tgaattgcag aggaaagttt tatgaatatg 1680

gtgatgagtt agtaaaagtg gccattattg ggcttattct ctgctctata gttgtgagat 1740

gaagagtaaa aacaaatttg tttgactatt ttaaaattat attagacctt aagctgtttt 1800

agcaagcatt aaagcaaatg tatggctgcc ttttgaaata tttgatgtgt tgcctggcag 1860

gatactgcaa agaacatggt ttattttaaa atttataaac aagtcactta aatgccagtt 1920

gtctgaaaaa tcttataagg ttttaccctt gatacggaat ttacacaggt agggagtgtt 1980

tagtggacaa tagtgtaggt tatggatgga ggtgtcggta ctaaattgaa taacgagtaa 2040

ataatcttac ttgggtagag atggcctttg ccaacaaagt gaactgtttt ggttgtttta 2100

aactcatgaa gtatgggttc agtggaaatg tttggaactc tgaaggattt aaacaaggtt 2160

ttgaaaagga taatcatggg ttagaaggaa gtgtttgaaa gtcactttga aagttagttt 2220

tgggccagca cggtagctca cccttgtaat ctcagcctcc caagtacctg ggactacaga 2280

tctttagata agcactcttt caaccaaatg ccaatcagaa aatctttgaa tccacctgtg 2340

agctggaagc cccgctgtgc tttgtgttgt cctgcctttt cggaccaatg taaatctcac 2400

atgtactgat tgatgcctac atctccttaa aacgtataaa atcaagctgt aacccaacca 2460

ccttgggcat gtgttctgag gacctcttga ggctgtgtca ctggtcatga tccttaacct 2520

tggcaacata aacttctaaa ctgat 2545

<210> 735

<211> 822

<212> DNA

<213> Homo sapiens

<400> 735

aaggagaccg gtggggacgg ggcggggcgc agccttgcga agccctaacg cagcgctggg 60

gagggggggcg gccgaaaggg gggcggtggt cgggccgcgc aagcggagat ggaatggggc 120

ccgggctcag actggtcacg gggggaggct gccggcgtgg accgcgggaa ggcggggctg 180

gggctcggcg ggaggccacc cccacagccg ccccgggagg agcgcgccca gcagctgctg 240

gacgcggtgg agcagcggca gcggcagctc ctggacacca tcgcagcctg cgaggagatg 300

ttacggcagc tgggccgccg gcgcccggag ccggctggtg gcgggaacgt ctcagccaaa 360

cctggagcgc cccccagcc ggctgtctcc gccagaggcg gctttccaaa ggatgctggc 420

gatggagctg cggagccctg accatccccg agcagaatac cctgacttct ctccctcccc 480

agggccggtg gctggactct gaacaactcc cttcagtaaa ggggccagtc ttcactggca 540

gtggctggta cttggctctc agcctggagt ggcagctctg ctagcagctg ggttcactcc 600

cacttcatcc tggctgaaag cagtgctgtg ctttgaaatg cagccaatga atacccagtc 660

tgattaccca gatttgggca gaccagcagt gctcgccaga gtggtctggc ctgctatggg 720

```
ggatccaggt ggtgttacat gtccatttca tgttttgggg gcttttagcc ccacaaaaca    780
ccttcagtag agccttgatt aaaaggaaac ctgcagactc tc                       822
```

<210> 736

<211> 1809

<212> DNA

<213> Homo sapiens

<400> 736

```
atattttccc tttagaaatt atcaacaaat ttactgatta ctaagtagaa cagaggactt     60
gggagaatac ttcataaaca aaagcatagg cgttgcctat gttgtaagca catttagaag    120
tgagatgatt ttgcttctcc atagagtact ttttatattt tttatatatc aattgaaaaa    180
ggcagtgtat aggtaatagg taatttctca agttttagga ttttagttat tgccaggtct    240
gtttaagata cagatttata gcagtttgct tctagctgca gtttaagatg tttatctttt    300
ttttttttgag tctgtcgcct aagctggagt gcagtggtgc catcttggct cacttcaacc    360
tctgcctcct gggttcaagt gattctccag cctcagcctc ccgagtagct gggattacag    420
gcatgcatca ccgcgtccgg ctgatttttg tattttagt ggacacagtt tactatgttg    480
gtcaggctga tcttgaattc ctgacctcag atgatttgcc tgcctcggcc tcccagagtg    540
ctgggattac aggcgtaagc cactgcacct gggctttttt tttttttttt tttttttga    600
gacagagttt cattgtcatt gaggctggag tgcagtggcg tgatctcagc tcactgcagc    660
ttccacctcc tgggttcaag ccattctctt gcctcgggct cccaagtagc tgggattaaa    720
ggtgtgcacc accacgccag ttaattttg tattttagt agagatgggg ttttaccatg    780
ttggccaggc tggtctcaaa ctccagacct caagtgatcc tcctgccttg gcctcccaaa    840
gtggtgggat tataggcatg agccaccacg cccggttaag atgtttatct atagttgtag    900
taaagattta aattatttga agcatagaga ttttttttta tgttttgttt tctaattgtc    960
atggtaggtc atgtcatact aaatacaaga taggctatag agttttaatt tactgtcatt   1020
gaacaatttg cattgtttag gaggtactag gatgatcaac tgattgaaaa attcatcagt   1080
gtgttaatga atttttttcac ccctttagat atatgctgaa aacatttagc atgagttgta   1140
```

ttttaataca attttcaata ttttttcaaa ttgagacata aaaactaagg cattttaaat 1200

atctgtgctc taataaaaat attttagaaa tattcattga tgctgctttt tacacaggag 1260

aacacaaagt tatacctcaa tttacttgaa atggaatata gtggtgacct caaacaaaat 1320

gaagaaaata tcctaaattg ttttgacaaa gctgtacatg gttcattacc tattaaaatg 1380

agaattacat tttctcagag aaaagtggaa tttcttgaag attttggttc cgatgttaat 1440

aagtaagata ttagttatat tacctatttg aatgataaat gagcattgat atttttgtat 1500

ggggatttga tgattagtat agattaatac attgttaaat tttaaaatgt tcgcttagtt 1560

tactttttcc tcagatatat atggggggtaa attcaatttt gtaaatgtat atgtacttaa 1620

caggaaggca taaggtttgt ctttccttca aaactgtttt cccaatttta gaatgacaat 1680

ttaaaccatg actgaatgag agaaggcagg aaggagcaat cctgtgaaaa gggaaatggg 1740

ataaggattg aaccctgaaa cccaaatatt taatatatag gtcaataaag atggatggga 1800

ttaatctcc 1809

<210> 737

<211> 2199

<212> DNA

<213> Homo sapiens

<400> 737

atatttaaaa agaagatctg gaaaatatgt atagcatggt gtatacatat aattagccca 60

tataggtaca tgaagttcct caggagactg ggaggatgca cagccaggta aacctgtaga 120

gcatggagac attaggtggg aggtgatgga aaagtccctc agtttttttt tttttttgaga 180

cagtctcgct ctgttgccca ggctggagtg cagtggcatg atctcagctc actgcaacct 240

tcacttcctg ggttcaagcg attctcctac ctcaacctac caagtagctg ggattacagg 300

cgcccgccac cacgctcagc taattttggt agttttagtg gagatggggt ttcaccatgt 360

tggccaggct ggtcttgaac tcctgacctc aagtgatcct ccccgccttg gcctcccgaa 420

gtgctgggat tacaggtgtg aaccactgtg cccagacctt catttgtttt gtatacatct 480

gtattcattg aatcttctac aaggtttatt tattcatgta tgcctattgt tccggttatc 540

```
tattgttgca tgaaaaacac cccaaaactt aatagtgtaa aacagcagcc cctttattat   600

gctcacaact tggtggtcag atttcaagca agacccagag gcacaactca tctcgttcca   660

cagtggctgg agcttcagct gaggtggctc aaatggctgg agaacacttc cctgcagcag   720

aacctacaac catcttcctc ccctttctgg aaaaggtttg tttctgaggc tggagtcaga   780

gtcttcaaac caacagccag agataacatt gctaattatg cccctttcct tggtctttat   840

ttgaaatgaa acggttctgt taccggtaga gggtcttgat gcaaattgtc caggttcttg   900

gcattttgaa caaagaactg gacaaaacgc acagcaaagc gaggtaagaa tgaagcagca   960

aaagcagaga tttattgaaa gtacatgcca cagtgtggga gccggccaag cagcagctta   1020

aacacccct agaggtttcc cattggccac ttggtgttca ccccatgtaa atgaaccaac   1080

ctcagtcagt ctgattggtt gcaaccaatc agaggctgaa gtgaagttac aaagttacac   1140

tcctgtgcaa acgtctgatt gcaaaaagca gccagtcaga ggtaccttca atttcccatc   1200

tgcccctcag aaaaggtggg cattggcaaa gggagtagcc tctggtcctt ttgttactta   1260

tgcgtggaaa gttggggttt ttctttcgat ttagttctag gaagtcaagg tgaactggcc   1320

ttcagttccc tgcctccaga ccctattctg cctcagttca aatacacaaa acctaacaaa   1380

tacctatatg accaccttcc acaactaatc aatggcagtg tctattagtt tgactttgtt   1440

tctattttac aagaagcaaa agcacctctg gactctccac tagagagcta tgtgcagcca   1500

ctccagcatg gtgctctcag ggtaaccaga cttcttacac tagctccaag tgcaagttct   1560

cctagcaaac aagatagagg ttgcaaggcc ttttatgacc tcaccctgga ggtcacacca   1620

catctgtatt tcattgtatt tcattggtag cagtcacaag ctgcccagat acaaggcaga   1680

gggacagatg ccccacttct tgatgggatg agtggcaaaa aaaaatctgt gaccatgttt   1740

aaaacccaga agatttggct gttagagatt tgtgaagttt ttaaaagtta agaattatta   1800

aaacaaaaat aaaacccagg agacaaggta gtggaagtgt gtccctccca ttcactgacc   1860

aaggtgaggg gactctagtc ctttgctgct gaccttcagc ctcccttcct cttaaaaaga   1920

ggtcctagtt ggggagcgat ggctgaagag ttaccataaa ataccaagta ggagcgaggt   1980

gcggtggctc gcgtctttaa tcccagcggt ttgggaggac aaggtgggag gatcgcatga   2040

gcccaggagt tcaagacaaa cctgggcaac atggcaaggc tctgtctctg caaaaaagga   2100

aaagagtaca aagtagggcc atttagtatg gtttcatctt tattaaaagt cttaagtttt   2160

agattttga agttatcacc aataaaatat ccagttgtg   2199
```

<210> 738

<211> 1823

<212> DNA

<213> Homo sapiens

<400> 738

```
atcacttcca acagtgacgt gttctccaaa taccagctcg acaaagatgg ggttgtcctc      60

tttaagaagt ttgatgaagg ccggaacaac tttgaagggg aggtcaccaa ggagaacctg     120

ctggacttta tcaaacacaa ccagctgccc cttgtcatcg agttcaccga gcagacagcc     180

ccgaagattt ttggaggtga aatcaagact cacatcctgc tgttcttgcc caagagtgtg     240

tctgactatg acggcaaact gagcaacttc aaaacagcag ccgagagctt caagggcaag     300

atcctgttca tcttcatcga cagcgaccac accgacaacc agcgcatcct cgagttcttt     360

ggcctgaaga aggaagagtg cccggccgtg cgcctcatca ccctggagga ggagatgacc     420

aagtacaagc ccgaatcgga ggagctgacg gcagagagga tcacagagtt ctgccaccgc     480

ttcctggagg gcaaaatcaa gccccacctg atgagccagg agctgccgga ggactgggac     540

aagcagcctg tcaaggtgct tgttgggaag aactttgaag acgtggcttt tgatgagaaa     600

aaaaacgtct ttgtggagtt ctatgcccca tggtgtggtc actgcaaaca gttggctccc     660

atttgggata aactgggaga cgtacaag gaccatgaga acatcgtcat cgccaagatg     720

gactcgactg ccaacgaggt ggaggccgtc aaagtgcaca gcttccccac actcaagttc     780

tttcctgcca gtgccgacag gacggtcatt gattacaacg gggaacgcac gctggatggt     840

tttaagaaat tcctggagag cggtggccag gatggggcag gggatgatga cgatctcgag     900

gacctggaag aagcagagga gccagacatg gaggaagacg atgatcagaa agctgtgaaa     960

gatgaactgt aatacgcaaa gccagacccg ggcgctgccg agacccctcg ggggctgcac    1020

acccagcagc agcgcacgcc tccgaagcct gcggcctcgc ttgaaggagg gcgtcgccgg    1080

aaacccaggg aacctctctg aagtgacacc tcacccctac acaccgtccg ttcacccccg    1140

tctcttcctt ctgctttcg gtttttggaa agggatccat ctccaggcag cccaccctgg    1200

tggggcttgt ttcctgaatc catgatgtac ttttcatac atgagtctgt ccagagtgct    1260

tgctaccgtg ttcggagtct cgctgcctcc ctcccgcggg aggtttctcc tcttttgaa    1320
```

aattccgtct gtgggatttt tagacatttt tcgacatcag ggtatttgtt ccaccttggc 1380

caggcctcct cggagaagct tgtcccccgt gtgggaggga cggagccgga ctggacatgg 1440

tcactcagta ccgcctgcag tgtcgccatg actgatcatg gctcttgcat ttttgggtaa 1500

atggagactt ccggatcctg tcagggtgtc ccccatgcct ggaagaggag ctggtggctg 1560

ccagccctgg ggcccggcac aggcctgggc cttccccttc cctcaagcca gggctcctcc 1620

tcctgtcgtg ggctcattgt gaccactggc ctctctacag cacggcctgt ggcctgttca 1680

aggcagaacc acgacccttg actcccgggt ggggaggtgg ccaaggatgc tggagctgaa 1740

tcagacgctg acagttcttc aggcatttct atttcacaat cgaattgaac acattggcca 1800

aataaagttg aaattttacc acc 1823

<210> 739

<211> 1744

<212> DNA

<213> Homo sapiens

<400> 739

cttttttcgca acgggtttgc cgccagaaca caggtgtcgt gaaaactacc cctaaaagcc 60

aaaatgggaa aggaaaagac tcatatcaac attgtcgtca ttggacacgt agattcgggc 120

aagtccacca ctactggcca tctgatctat aaatgcggtg gcatcgacaa aagaaccatt 180

gaaaaatttg agaaggaggc tgctgagatg ggaaagggct ccttcaagta tgcctgggtc 240

ttggataaac tgaaagctga gcgtgaacgt ggtatcacca ttgatatctc cttgtggaaa 300

tttgagacca gcaagtacta tgtgactatc attgatgccc caggacacag agactttatc 360

aaaaacatga ttacagggac atctcaggct gactgtgctg tcctgattgt tgctgctggt 420

gttggtgaat ttgaagctgg tatctccaag aatgggcaga cccgagagca tgcccttctg 480

gcttacacac tgggtgtgaa acaactaatt gtcggtgtta acaaaatgga ttccactgag 540

ccaccctaca gccagaagag atatgaggaa attgttaagg aagtcagcac ttacattaag 600

aaaattggct acaaccccga cacagtagca tttgtgccaa tttctggttg gaatggtgac 660

aacatgctgg agccaagtgc taacatgcct tggttcaagg gatggaaagt cacccgtaag 720

gatggcaatg ccagtggaac cacgctgctt gaggctctgg actgcatcct accaccaact   780

cgtccaactg acaagccctt gcgcctgcct ctccaggatg tctacaaaat tggtggtatt   840

ggtactgttc ctgttggccg agtggagact ggtgttctca aacccggtat ggtggtcacc   900

tttgctccag tcaacgttac aacggaagta aaatctgtcg aaatgcacca tgaagctttg   960

agtgaagctc ttcctgggga caatgtgggc ttcaatgtca agaatgtgtc tgtcaaggat   1020

gttcgtcgtg caacgttgc tggtgacagc aaaaatgacc caccaatgga agcagctggc   1080

ttcactgctc aggtgattat cctgaaccat ccaggccaaa taagcgccgg ctatgccct   1140

gtattggatt gccacacggc tcacattgca tgcaagtttg ctgagctgaa ggaaaagatt   1200

gatcgccgtt ctggtaaaaa gctggaagat ggccctaaat tcttgaagtc tggtgatgct   1260

gccattgttg atatggttcc tggcaagccc atgtgtgttg agagcttctc agactatcca   1320

cctttgggtc gctttgctgt tcgtgatatg agacagacag ttgcggtggg tgtcatcaaa   1380

gcagtggaca agaaggctgc tggagctggc aaggtcacca agtctgccca gaaagctcag   1440

aaggctaaat gaatattatc cctaatacct gccaccccac tcttaatcag tggtggaaga   1500

acggtctcag aactgtttgt ttcaattggc catttaagtt tagtagtaaa agactggtta   1560

atgataacaa tgcatcgtaa aaccttcaga aggaaaggag aatgtttttgt ggaccacttt   1620

ggttttctttt tttgcgtgtg gcagtttttaa gttattagtt tttaaaatca gtactttta   1680

atggaaacaa cttgaccaaa aatttgtcac agaattttga gacccattaa aaaagttaaa   1740

tgag   1744

<210> 740

<211> 2763

<212> DNA

<213> Homo sapiens

<400> 740

atccggtcaa agttgctcgt gtgctgccat tcccgcatgg cccgccacag tccctcctcc   60

agcgccatgg tgggcttccg ccgggccggg gatcggagaa ctgggctgta aaccagtgca   120

gtcagtccca gtctgtaagc ccaccctcca tcccgggccc acctggtccc aacacctggc   180

```
tcctgtcctc cccacacctg tcctgccatc tgtccctgtc ctgtcctccc ccatgtgggc   240

tcctcagcct ccaggacaca cccccaagat ccaacatcaa cagaagccac tgagtggcct   300

ctccgactgc ccctcaagtc ctcggtgtta tgatgttgac aagtgaactc agtgctatgg   360

gtggaacatg tgtgtcccca acattcctgt gttgaagccc tcagtgccag tgtgtcagta   420

tttggaggca atcagggtta gagcaggtca tgagcgtggg tcccagtcat ggaatccgag   480

ctctgataag ggcaggagga gacaccaggg ctcttgctct cagccacaag agcacacagc   540

cagaggcagc tctctccagc caggaagagg gccctgacca gacacccaat ccgctgtcac   600

cttgatctgg gacttctggc ctctggaact gggagacatg aatgtgtctt gataaagcac   660

ccagtctatg ggattcgtta cggcagagcc tgagctgact gagacaccat gcacacagaa   720

tgacctggga gcgagggtta aagtgcaggt tcctgggcca caggactgag catttgacca   780

gcttcctggg gactctggag caaggcagcc cctggggaca cagcctcagg gtcctggagc   840

ttgaggagca ggagcacatg tccagaacca aagcagagcg gtgtccaagc cactgcaagc   900

agccaggcac agcttcccac attcccacag gagccaaggc aaaggcctgt gagcccgggg   960

cggctacact ccaagaatca gggtccccag tgcaccggga ctccgctcca agggggggatg  1020

caaccagttc cagggtgtgg gggcagcgag actgttgggg aggaagacgg gaccgccttc  1080

acctacaccc caggcagggg actcccctag gggaacggcc agtgtgttgc acggtggata  1140

tgctcaagct cctgtttgct catcagcggg aaacaaaggg tcacagaggt gccgtggggt  1200

ggagagaggc agggactggg aatgaaacca caaactctcc cagatgctga tgttgctgcc  1260

tcacagtcac cacagtccac ggctctgggc tgctgggctc gtggtgcact cagagctatc  1320

actggagccc gtggctttgg ggagcactct cctagatggc ctagtcctga taatggtagt  1380

aatggggaca gtaatcctaa ttgctgtcat gtaatgtgtc atagtatgtg ccaggcactg  1440

tgctacgtat gtcatatgtg agttcaagtc atctctttgc catcctctga atgaagcacc  1500

attgtccttt tttctagggg ggattgacgg tgaagatgct aatacctgcc cagcatcgac  1560

cctagtgcgg gtcccaagac catccccctg tgcaggctcc accaccgctg tgctaactgg  1620

accgcggcag atgagtgggt gtgtgccagg tttctgctgg gccctgcagc tcctcccccc  1680

agccccatgt gatgtgcccc tggccattga cactcagttc gagggaaggc actggggtgt  1740

acactcaaag acctaaaccc agggtggggtg cggtggctca cgtctgcaat cccagcactt  1800

tgggaggctg aggcgggtgg atcacaaggc caggagttca agaccagcct gcttaacata  1860

gtgaaacccc gtctctacta aaaaatacaa aaaaattagc cgggcatggt ggcgggcacc  1920
```

tgtaatccca ggtacttggg aggctgaggc aggagaattg cttgaaccca ggaggcagag　1980

gttgcggtga gccaagatcg caccattgca ctccagcctg ggtgacagtg cgagactcca　2040

tctcaaacaa acaaacaaaa aagacctaaa cccaaaccgt ggctcacgtc acaccaagaa　2100

ccctctctga cctgggtctt ctgtaaacat ggttgtgaaa attattgaaa gtaaaagccg　2160

ggcacggtgg gtcatgcctg caatcgcagc actttgggag gccgaggcgg gagaatcacc　2220

agggcaggag attgagagca tcctggctaa catggtgaaa ccccgtctct actaaaaata　2280

caaaaaaatt agccgggcat ggtggcgggc acctgtagtc ccagctactc gggagcctga　2340

ggcaggagaa tgacgtgaac ctgggaggta gagcttgcag tgagccgaga tcacgccact　2400

gctctccacc ctgggcgaca gagtgagact ccatctcaaa aaaaaaaaaa aaaagaaaag　2460

aaaagaaaag aaagtaagta ttggggcggg gcatgatggc tcatgcctgt aatctcagca　2520

ctttgagagg ctgaggcggg cagatcaact gatgtcggga gttcaagacc agcctgacca　2580

acatggagaa accccatctc tacgaataca aaattagcca ggcatggtgg cacatgcctg　2640

taatcccaac tactcaggaa gctgaggcag cagaatcact tgaacccagg aggcggaggt　2700

tgtgatgagc tgagatcgcg ccattgcact ccagcctggg caacaagagt gaaagtccat　2760

ctc　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　2763

<210> 741

<211> 1737

<212> DNA

<213> Homo sapiens

<400> 741

taggatcccc tctgtccacg agaagaagct gaggctctga gcggatgcac aggtcaccca　　60

tggcaggtgc cgtgcagtgg tgtcaggaac ccgtccgggt cttcacacaa agttctctcc　 120

agtccatctc gtgggcggct catgttagag cgacattcaa atggaaggtt tggaaaggaa　 180

tgcctctgtc ttgtgaagta ggacatggca gacttggcga cgacaagggt ccaggagaac　 240

tgagacgcag gatggaagac agagaagacc ccccggagct cctcgctctg cttggtggct　 300

tcaggagtgt ggccctcccc aggactccac ttcatcctgg gcttgcaccc tccttgagcc　 360

```
aatgcactga actgcctttg aaaggaaatt gcatgttctg accattttag gataccttta    420

ctttaaggac cacacagtcc cagaggacac atccctcggg aactctgccc ctctgacaat    480

gagggccaca gagaaggtgg tgtttccatg gtagatgctc ctgttctggt gataccaaac    540

ctgcccaccc ctctgagtcg tctttgctca tggacttgca gcagagccac gtagtttggc    600

attttgattc agaaagtggg gagcagagac ccagccaaat ccaaactttt ttttggtttt    660

gttttgtttt gtttttaca agatataaca taacccagga aacagaccca gctgaggtta    720

ttctcagtgg attacagtat acttttgtgt gtgtaaaagc acaaagtgca tgtgtactca    780

cttctggcca tataacattt acacagggaa atggatcatt gattttctt taatcaacgt    840

gaatgaagaa tgtttgttta tatatcacta taaaatccag ttgacctgga cagtattata    900

tgtacatatc tattctaatt aaatttaaca atcaaaggat tggattactt ttttccccct    960

tgtaaagagg ttcgtgaatg tggtcaattg tatagatagc gtgttaaagc caaaacccag   1020

ctctgagggc cttacccatt acttggatat ttgctacgat ccatctccct ttgtgagtca   1080

aatgttaaga gaagaaactt gtatttgcag ctagaggtta ctgtcacatc atagatttaa   1140

catttaccat cttcaaagta caaatcttac atgtccttca aaaggaggtc ttaatacagt   1200

tcctagttcc ttacttctgt tttaaacttt gggtaccaaa ccaaaaagaa aaaaaaagaa   1260

aggaaaagat cttctttgaa gaaaagtatg tctctggatc cctggaaaat aatgatgtcc   1320

aaagcaaatt gtgaagatca aatgtgtgtt aagaaaaggt gtcgagggga gggacaaaac   1380

cagaaacggt ggaaggacca gtgtaatagt cacagacttg catcctggct ctgcttacat   1440

ttcctggtac tctcgaatgt acgggcgttc acatagtcat tgtgaagttg ttggggtttt   1500

tttggttttg tttttaattt agctcttctc tgaggacgaa gctgttggtg gtggtggtgg   1560

tgggggtggt ggtgtgggat acatggtggt caagttgtca gccctgatca gtttggactc   1620

tgtaactcat aggtgcattc ttttttttctt tggtgtctca caaattaccc aattgttgaa   1680

taaaactata aatatgttaa taccagcttt ttccaataaa ataacaaatg ttacatc      1737
```

<210> 742

<211> 1443

<212> DNA

<213> Homo sapiens

<400> 742

gcgctcacaa	tggagctctc	ggagtctgtg	cagaaaggct	tccagatgct	ggcggatccc	60
cgctccttcg	actccaacgc	cttcacgctt	ctcctccggg	cggcattcca	gagtctgctg	120
gacgcccagg	cggacgaggc	cgtgttagat	catccagact	tgaaacatat	cgacccagtg	180
gttttaaaac	attgtcatgc	agcagctgca	acttacatac	tagaggcagg	aaagcaccga	240
gctgacaagt	caactctaag	cacttatcta	gaagactgta	aatttgacag	agagcgaata	300
gaactgtttt	gcacggaata	tcaggttact	tactttaaaa	tttttaatta	acagtactat	360
ttttctttta	ctttgtttgt	aaagatgttt	ttttttcttt	ctttcttgct	ttcttttttc	420
tctccagaat	aataagaatt	ccctagaaat	cctactggga	aggtaggtac	tgtataaggt	480
gtcaagctga	ggcacttttc	acttgcaggt	atgaatggag	agtgttggtg	tgaaacaaga	540
tcttcgggat	cttgacccaa	agaaaaggag	ccaaagggca	tgtcaagcaa	ttgaagttaa	600
gctcatgttt	ttaaagatcg	tttattgaga	tgattttgaa	atgctccttt	accattcata	660
atttaaaaat	aaagtttaac	aatggtttaa	attcagaatg	gattaaaatg	gagttggggg	720
tggaaagtag	agccattctt	agtaaatata	aataactgaa	aagttcttct	gaggagacta	780
tgtacgaagt	tatcattgca	tctttcagta	taggcagatc	tctccctcat	ataacggatg	840
tttcttggcg	cttggaatat	cagataaagg	taaagtttaa	gaaacttctc	tagcggggga	900
tttagggaac	ttcttaaaac	ctagagttaa	aagctgttgc	gtgtttgttg	tgttatttta	960
gaccaatcaa	cttcatagga	tgtacagacc	tgcatatttg	gtgaccttaa	gtgtacagaa	1020
cactgattcc	ccatcctatc	cagagattag	ttttagttgc	agcatggaac	aattacagga	1080
cttggtgggg	aaacttaaag	atgcttcgaa	aagcctggaa	agagcaactc	agttgtaact	1140
tggggaagtt	aacgatccgc	ccgagtgcag	aggaaaacca	gaaacgcctt	gccttcagct	1200
gaaccaccgt	ttgtgcgagc	tggatgtcct	tttcagtaga	aaagaatttt	ccttttgaat	1260
ttataccatt	catcaatttt	gacactttaa	aaacgtgtga	aagggttaag	agggaaagat	1320
actgcccaag	tatttgaatc	gtttagtagt	aactgtccat	ttatcctatt	ttgatctttt	1380
tcaagtcttc	tgaaaggaag	tagacagtat	tacaccctga	ataaataagg	tgttgttttc	1440
cac						1443

<210> 743

<211> 1765

<212> DNA

<213> Homo sapiens

<400> 743

agagcaggat ggagaggaga cgcatcacct ccgctgctcg ccgctcctac gtctcctcag 60

gggagatgat ggtgggggc ctggctcctg gccgccgtct gggtcctggc acccgcctct 120

ccctggctcg aatgccccct ccactcccga cccgggtgga tttctccctg gctggggcac 180

tcaatgctgg cttcaaggag acccgggcca gtgagcgggc agagatgatg gagctcaatg 240

accgctttgc cagctacatc gagaaggttc gcttcctgga acagcaaaac aaggcgctgg 300

ctgctgagct gaaccagctg cgggccaagg agcccaccaa gctggcagac gtctaccagg 360

ctgagctgcg agagctgcgg ctgcggctcg atcaactcac cgccaacagc gcccggctgg 420

aggttgagag ggacaatctg gcacaggacc tggccactgt gaggcagaag ctccaggatg 480

aaaccaacct gaggctggaa gccgagaaca acctggctgc ctatagacag gaagcagatg 540

aagccaccct ggcccgtctg gatctggaga ggaagattga gtcgctggag gaggagatcc 600

ggttcttgag gaagatccac gaggaggagg ttcgggaact ccaggagcag ctggcccgac 660

agcaggtcca tgtggagctt gacgtggcca agccagacct caccgcagcc ctgaaagaga 720

tccgcacgca gtatgaggca atggcgtcca gcaacatgca tgaagccgaa gagtggtacc 780

gctccaagtt tgcagacctg acagacgctg ctgcccgcaa cgcggagctg ctccgccagg 840

ccaagcacga agccaacgac taccggcgcc agttgcagtc cttgacctgc gacctggagt 900

ctctgcgcgg cacgaacgag tccctggaga ggcagatgcg cgagcaggag gagcggcacg 960

tgcgggaggc ggccagttat caggaggcgc tggcgcggct ggaggaagag gggcagagcc 1020

tcaaggacga gatggcccgc cacttgcagg agtaccagga cctgctcaat gtcaagctgg 1080

ccctggacat cgagatcgcc acctacagga agctgctaga gggcgaggag aaccggatca 1140

ccattcccgt gcagaccttc tccaacctgc agattcgagg gggcaaaagc accaaagacg 1200

gggaaaatca caaggtcaca agatatctca aaagcctcac aatacgagtt ataccaatac 1260

aggctcacca gattgtaaat ggagtgccgc cggctcgcgg ttagctgcct gcctctcaga 1320

cacggcgctt tgcccagctt gacagggagt gagcctcacc caccccatcc tcccaatccc 1380

cctgagttcc ctcttcccag gcttccccta aagggcctgg actgcgtcat tttcccagga 1440

actgcagtgc ccagcccagg acgtggtaca gagtaactgt acattaaact ggcagagctt 1500

gttagtggta aaggtggtga gtccttgggt gcgcagtgga gctgctctgg ggcctctgag 1560

caagcagcag cctctgtctc acctcttcct gtcactggga gggccccttg ggtctcgctg 1620

tgcctggacg ccaggctctc tgctttattc tttcatccct gaggctccat cgctcagctc 1680

agtgctgact cagttcagag gattcttccc tcaggaccgc agctcttgca gtgaataaag 1740

ttttatgttc cctgctctta atgtt 1765

<210> 744

<211> 1650

<212> DNA

<213> Homo sapiens

<400> 744

cttgctagtc tgggacttcc cggtggagtg aggaacccag caacacgctc ctgacttccc 60

ttcccaagga ctcgacctga gaaccgccat gtactcggag atccagaggg agcgggcaga 120

cattgggggc ctggtggccc ggccagaata cagagagtgg aatccggagc tcatcaagcc 180

caagaagctg ctgaaccccg tgaaggcctc tcggagtcac caggagctcc accgggagct 240

gctcatgaac cacagaaggg gccttggtgt ggacagcaag ccagagctgc agcgtgtcct 300

agagcaccgc cggcggaacc agctcatcaa gaagaagaag gaggagctgg aagccaagcg 360

gctgcagtgc ccctttgagc aggagctgct gagacggcag cagaggctga ccagctgga 420

aaaaccacca gagaaggagg aggatcacgc ccccgagttt attaaagtca gggaaaacct 480

gcggagaatt gccacactga ccagcgaaga gagagagctg tagggccagc tgccgggctc 540

aggccactgc ccaccctggc ctggacagcc tccttcagcc cttctgtacc tggcagccct 600

gggccccagg ccctgggacg tctgtgatgt tcccacctgc ttctgtggaa atgtgtcacc 660

ccagagggcc tggctctccc tgggaggctg gggcccctaa gctcctaggt tttccttcca 720

agcacccagc cctcctgctc caagagggat aacctgcacc cctccctgca aggggttcag 780

agcccagcac aggagctttc tctggcagaa ttgaggagga agaggtggcc ctctgacttg 840

```
acaagccttc tgttctgccc aggccttccc accaggaatc tccgaggctc cccagggccc    900

cgcttctccg tacaccccag ctcctaggtc tcagagaact cccccacctg tggttttacc    960

tgcagccagc agagcttagc ttcaaggaca cctgccttca aagccactga ggggaggaag   1020

ggcagggcag actgcaggtg gccttgttgc tggcatcccg gccaggtggg cggggactaa   1080

caaagacagc tgtttagggt cttctcccct cacccatgct ttcatcatcc cctccgcaca   1140

gcctccccgt ccaggccttc taaccacacc tacccagggc tgccgcattc ctgcactcag   1200

aagtctgcag cggtgcctca caaacttgat tgtgcataaa aatcactggg gatcttgtta   1260

atacagcttc taactcaata gatctgggag atcctgcatt tctaacaagc tcccaggtaa   1320

ggcggaggct gctggtgtga ggaccatgct gtgagcagca gggcgagagt gcccagggct   1380

gatatatatt ggaaatatca cccctgaagc catcgctggc ccccacctcc tgtggactga   1440

tgccccaggg attcccaccc cacttctgca accccaggta tccttcatta tccaccccat   1500

cccagactcc caccccaggg attgcccgtg aagactttgg cctagcaaat tgtgttggtt   1560

atgtgagtgt tgttttaatc agagatgtac atgattgcca atctgcattt cttaccagtg   1620

tgaccacact gttacgatgc aattctagcc                                     1650
```

<210> 745

<211> 1970

<212> DNA

<213> Homo sapiens

<400> 745

```
gtgagggtac tctgccggtt ttgctgcgga agtcacctcg tggcgtaggg gagaggtaac     60

accgagaaga ggcagcggcg gtggcgccaa gacgattggt gccaaacagg gcagaacgca    120

actcagctct ggggtgggtt cctgtccaga ggggtagaga agagtggctg agggcgcgcc    180

ctgatctcag cgggaagagt gcgaccccga gggcgcgcta gtttgtgaat agcacaatgg    240

aagaagctgg actttgtggg ttaagagaga aagcagatat gttgtgtaac tctgaatcac    300

atgatattct tcaacatcaa gactcaaatt gcagtgccac aagtaataaa catttattgg    360

aagatgaaga aggccgtgac tttataacaa agaacaggag ttgggtgagc ccagtgcact    420
```

gcacacaaga gtcaagaagg gagcttcctg agcaagaagt agcccctccg tctggtcagc　480

aagctttaca atgcaacagg aacaaagaaa aagtcttaga gagacaaggt ctttccctgt　540

cacccaggct ggggcgcggt ggtacattca tgggtcatgg cagccttaaa ctccctgagc　600

tcgtgatcct gtctcttcag actctagagt agctggggct acaggcgtac accaccacac　660

atggctaatt ttttattttt cttttgttgt agagatgggc tgtcattctc ttgcccaggc　720

tggtcttggt atactgtcct gtagcagtat attttggcta cctgtactgg cattggcttt　780

tccaagtgtc aagattacag gtgtgagcta gtataccctg cccagtgttt ctttcttact　840

tggctttggt gtgaatgaga aaagaattta gtactaaaat tttatgtgca tacagaagca　900

ttatttgaag tcagcctgtt ttccctcaac ctctagtact ctgtaaagta taccaaaagt　960

caaggtttta aagaactgtg ttacatatta gagagaacaa atcaaaagtt acctatctcc　1020

atcgttacca gtagaacatt agtatgtatt ttgaagcacc atttgactct ttctatttca　1080

gctacttgct tgtcccttgc aaagttatta tagtactctt ttaaaacttt tcttcaaggg　1140

aagagctatt ttgacttcct tttctttgat ctaaacctaa cacccagaat atgcttagca　1200

gatcatccca aaacaatcat aacttgttta aattgttcat agcaaaagtt acatattata　1260

aagagttatg agtgtcttag gcagtgaata gtaactgaat atccttttat agttgtcctt　1320

cactagcagg aagccttatt ccctgccctt ttacatatct taacttagaa tgttactgtc　1380

taaatagtgg ttaggcaaga gtagttctta aacgtgcagt aattatcttg cactacattt　1440

aagggctaaa tagctagtag tggtgcttga taattgaaga aatttgtaca gctggaggaa　1500

gtacctgcta aattttcaaa agttacctga atttaatagg taaatctgtt tttaattaga　1560

gctatatcat tttactctga atgtcttaac atagaagttt acataaaatt tacagattgg　1620

attgatttca gccttcttct ggtacttttt aaaatcttat taatcattag gaaaagaagt　1680

tttattattg atgcaagccc taaacactct ttcgactcca gaggagaagc tggcagctct　1740

ctgtaagaaa tatgctgatc ttggaaattc acctcttcta tagaagagtt tgttttgaac　1800

tatacgattt gaaacaaaat tctttttttg gagactatgg aaacattctc aacagggaaa　1860

ccctactaga ctttgtaaag caaataatgg aaaagataca gaacttttg aagaatcatg　1920

ggaaattttt ataattaaat aaatgccaaa attctgtttt gtgaaacatt　1970

<210> 746

<211> 1561

<212> DNA

<213> Homo sapiens

<400> 746

atagagttta	gtggccagag	cgactcttca	gggaggtggc	aggaaaggct	tggaacagct	60
gccggaggtg	acggagcggc	ggccccgccc	ggtgcgctgg	aggtcgaagc	ttccagctct	120
ggacatcctg	agcccaagtc	ccccacactc	agtgcagtga	tgagtgcgga	agtgaaggtg	180
acagggcaga	accaggagca	atttctgctc	ctagccaagt	cggccatggg	ggcagcgctg	240
gccacactca	tccatcaggt	gctggaggcc	cctggtgtct	acgtgtttgg	agaactgctg	300
gacatgccca	atgttagaga	gctgacgtgc	ttcgtggctc	cctggaccag	cgcaaccagc	360
ggctcgaggt	tgactacagc	atcgggcggg	acatccagcg	ccaggacctc	agtgccattg	420
cccgaaccct	gcaggaatgg	tgtgtgggct	gtgaggtcgt	gctgtcaggc	attgaggagc	480
aggtgagccg	tgccaaccaa	cacaaggagc	agcagctggg	cctgaagcag	cagattgaga	540
gtgaggttgc	caaccttaaa	aaaaccatta	aagttacgac	ggcagcagca	gccgcagcca	600
catctcagga	ccctgagcaa	cacctgactg	agctgaggga	accagctcct	ggcaccaacc	660
agcgccagcc	cagcaagaaa	gcctcaaagg	gcaagggggct	ccgagggagc	gccaagattt	720
ggtccaagtc	gaattgaaag	gactgtcgtt	tcctccctgg	ggatgtgggg	tcccagctgc	780
ctgcctgcct	cttaggagtc	ctcagagagc	cttctgtgcc	cctggccagc	tgataatcct	840
aggttcatga	cccttcacct	cccctaaccc	caaacataga	tcacaccttc	tctagggagg	900
aggcaaatgt	aggtcatgtt	tttgttggta	ctttctgttt	tttgtgactt	catgtgttcc	960
attgctcccc	gctgccatgc	tctctccctt	gtttccttaa	gagctcagca	tctgtccctg	1020
ttcattacat	gtcattgagt	aggtgggtag	ccctgatggg	ggtcgctctg	tctggagcat	1080
aacccacagg	cgttttttct	gccaccccat	ccctgcatgc	ctgatcccca	gttcctatac	1140
cctacccctg	acctattgag	cagcctctga	agagccatag	ggcccccacc	tttactcaca	1200
ccctgagaat	tctgggagcc	agtctgccat	gccaggagtc	actggacatg	ttcatcctag	1260
aatcctgtca	cactacagtc	atttcttttc	ctctctctgg	cccttgggtc	ctgggaatgc	1320
tgctgcttca	accccagagc	ctaagaatgg	cagccgtttc	ttaacatgtt	gagagatgat	1380
tctttcttgg	ccctggccat	ctcgggaagc	ttgatggcaa	tcctggaagg	gtttaatctc	1440

cttttgtgag tttggtgggg aagggaaggg tatatagatt gtattaaaaa aaaaaaaggt 1500

atatatgcat atatctatat ataatatgac gcagaaataa atctatgaga aatctatcta 1560

c 1561

<210> 747

<211> 2144

<212> DNA

<213> Homo sapiens

<400> 747

gttgccatgg agctgcccgc cccaaaccac gccgccggcg ccgcggaggg caatcgccaa 60

ggaccgccgc ctgcctgagc agcccggggt gtctgtgcct ccggagcccg agaacctggg 120

acccaggcca gccagagcta atttctatct cccagcatgg aggatgacgg cagcctgctc 180

cctgaggacg agcttttggc cgatgccttt cttttggaag atgaaagaga tgaattagag 240

gatccggagt ttgacatcaa atgtcttcta caggaagctg aggatgacgt ggacccggga 300

cacagcagct cagtgaaaga actagatact gatgctgata aattgaagaa gaaaacagct 360

gaggacagaa cgcaggcatt tcacctgcgg cagaacctga gcgccctgga taagatgcat 420

gaggagcaag agcttttcac tgagaagatg agaggggagc tgcgcgcctg tcggcagagg 480

cgggacctga tcgacaagca gcaggaggct gtggcagccg agatcgccac agaggaagag 540

gcgggcaaca tggccgctgt gggccgcctc caggccgtgt ccagacgcct atttgcagag 600

ctggagaacg agagagacct gcagtcgagg actgaggccg tgctgaagga gagcgagtga 660

gtcggtgtgc agccgggact ggcagcaggc aggcccccaga acgaacagcg agctgggttt 720

tcaaaaccca ggagagagac agctgcctcg tcctaaatgc tttcctgtgg agttgggttg 780

gatgcgtcga gttgccttcg gcgagtttgg caagaagggg tttgggaagg tgcacgaatt 840

tctcagggcg actgagggga ccctgagctg acctcaagta ggactcccga accacacagc 900

ccccagcccc gggagctgca gccaggtcca tgacatccac agcactgacc ctgcacatgc 960

ccgggatgac ctaagctttc cagcctgggc agggcaggag gcacagagag ggctgagtgc 1020

aggcctcagg ccacccccacc cctaagagtg cccatgccgc cagccctcat gcaacctaac 1080

atctcagcct cactccactg aagacaccac tgagctttga cccagtctct gacctgcact 1140

cactgtgatg tagtcacgac ccagtctctg acccacactt gctgtgacgt agtttctggc 1200

ccagtctctg acccgcgctc actgtgatat agtcacgacc caagctggtg tccagtgccc 1260

tgcactgtgg ccccacctgt gtgggcagtg ggaggggtgc aggggaggac aggacgctga 1320

acccagctgt ggctgagcgt ggagaacact gtccctgcg acactccttt gacaactggc 1380

tctgtcatgc ccctctcact gctcagcagc acctgcgcca gggtgagggg cttcacaggg 1440

ctaatgaacc ccagaaggcc tcactttact aggttgatgt gattgtccac ttctttaaaa 1500

aaaaaaaaaa aaaagtttt tgggctgggc ccagtggctc atgcctataa tcccaacact 1560

ttgggaggcc caggctggtg gatcacctga ggtcaggagt tcaagaccag cccaggcaac 1620

atagcgaaac cctgtctcta ctaaaaatac aaaaattaac tgggcgtggt ggtgcatgcc 1680

tgtaatccca gctactcggg aggctgaggc aggagaatcg ctggagccca gaggtagagg 1740

ttgcagtgag ccaagattgc gccactgcca cactccagcc tgggcgacag agtgagcaag 1800

actctgtctt ttaaaaaaaa aaaaaaatgg ctgggcgcgg tggctcacgc ctgtcatcag 1860

cactttggga ggccgaggcg ggtggatcac aaggtcagga gatcgagacc atcctggcta 1920

acacggtgaa acccccatct ctactaaaaa tacaaaaaat tagccgggcg tgctggcagg 1980

cgcctgtagt cccagctact cggaaggctg aggcaggaga atggcgtgag cccgggaggc 2040

ggagcttgca gtgagccaag attgcgtcac tgcactccag cctgggcgac agagcgagac 2100

tccgtctcaa aaataaataa ataaataaag ttttattttg aaac 2144

<210> 748

<211> 2802

<212> DNA

<213> Homo sapiens

<400> 748

ctccagccct ggaaatttca gctgccaggc agcacccaca cctgccctgg gagggagcca 60

tctggcacgt cgaggcaccc gagccttcag acgatgcacc ccatctgacc accgcaacct 120

cgtgggagac cccgtgagaa cctccagcta aagccagaaa acccctgaac catatatgag 180

agaataagtg attgtttcaa gttaccggtt ctggggtggt ttgttatgca gcgacaattg　240

actggatcat taaggatttg tacagacttc ctttctgggg cttttaagct tactaagcat　300

cagttctcag taagtacaac ccgtccctca gggcgggtga ggagcctcgg gtctgccaaa　360

gccgggccct ggcgggctgg agagcgcgag ctggggcgcc tgtcactcct gcgcgcacag　420

ggcgatcgcg cggagtcggg ggcggtttcc tgcacacaga aagggagtgc ttttaggggc　480

aaaggaagct cgccgcggcg tagggacgtc tttctaatgt cagcagagag aggccgatgc　540

gggaagagtt atccacagat gcgggaaggg agaggacgcg agaaggggaa ccgcgttctc　600

ctggccttcc gcggacgggg atcgggtacc gacagggttt acccgcggga agccgcaacc　660

cagcacccog ggcctggccg cgcaggcgct gaacgcgcct ttgctgtagt cctttgctgt　720

aagacagcga gagaggaagg atgaagtagg gacagacgag aacgccggca ggcactccca　780

cttccctact caacagcctg ccttcctttc ttgctgacag aaccatggtt aatggggggtg　840

tgtgtgtgtg cgcgcgcgcg cgtgtgcatg tgtgtgtgcg cacgtgagtg tgcgtctgtg　900

cgtgtgtgtg tgtgtccaga gggctggtgg gatgctaacg ggcccaactc aaaagctctg　960

ttccctagtc ttccttgcag tgagtagcgg ccatatgaca ccgttccggc caaagagacc　1020

taagtagacc tcactggatg aaacttctag aaagtgtgta aatgggtgta aattcacttg　1080

acgtgagctc cttgcccttt gtcctgtgcc catccccctt tagcagctct ggggctgggc　1140

ctaagcattt tcatttttcc caagttccct gacggatgct gatgctgatg ctgatgctcc　1200

cagggaccac accctgagca ccactgctcc aggactttgg ggctatgaaa agcagttgtc　1260

caaaggaatg agttggcaaa tcacatgtga gtggtttgaa attctttcta gtccacaaaa　1320

caacctaagg atgtccagga gatgggacaa gtttgaagca tttgagtaat gactggaagc　1380

acaaagggaa ccggacgcca ccactaattg tcaccaatgg agtaaacaac acgtgcctgt　1440

gttcttcagg aatggcgggg atgcaaccag aaaagagagt tctccttgat ggcacgtcca　1500

cacgcggctc ccactcatct ctctcggcca gccgcccgca gcctgttctc catcactgtc　1560

cagccgttcc ccacctgcct cgagtctgtg gcgtgggccg tgcaagtggt tctcgatcgc　1620

aggcatgttt tatccatcat gacttggttg ttacgataca cagtgtttat ttttcttcat　1680

aaaaagatgc aagctgtgcg cctccaaatg ctggcagctc agaatattcc atttgtttgt　1740

gaagagacag actggatggc acaatttcaa tcaaactatg aaatgcaggc tggcatgcct　1800

ggagagaaag atcataacag tgtgtactct tctttctgag aagccgcgga ctgcacacgt　1860

ggttaactca tcagcccctg gaaggcgtcc tggtggatgt gttccatcag ccatggcaaa　1920

```
gcaggaaggg gactctgtca aagctgtctg tcctcccct ggggacaggc ggggccacat  1980

gacacatgct gtgccacatt gattcactct gggtggaagg ggttgtgtcc tttgaattcc  2040

caaatggaaa tggctagagt ttttttttt ctaattacaa aagtaataaa tggtcattta  2100

cattttttcc aggaataaaa agactaaaga ctaaacaaca caccaaacaa aaaagaactc  2160

cacgaggact ataatttctt cttgatttt atccatctgc ctgtctataa ctgacctgcc  2220

ttttgcaacc ataggcttct ctccaagtac acatatagag atctatacct taattttat  2280

ggctgaatgt tattccaccg tgtagctata tcagcccct attgagagat ggttggttac  2340

gggttgtttt tttcttttaa aaactatact atgttggata tccttatgca tctcactccc  2400

tttgttttcc taattgtttt gggtaaactt ctagcggtgg aattgctgga gaaatgcatt  2460

tgatcaacat tcctgaactg ccctcccaa agtctgcgtg aatgacaccc accccgtcg  2520

cttatgaggc tgatcccagc ttcacacctg cattatcaac gcagggcaca aatctttgtc  2580

actttctgga gtgattttct cttagatttc tgaatgatta gcataccttg acatggtaaa  2640

cctttatata ataaagtttt taatttttct tattaacatg aattgtagct atatgaaata  2700

ttttattggt tgtctgcttt cttatttcag ctttccatta tgacaatgat taaacgttga  2760

agaaagttga aatagtagta caataaacat ccatataccc tc  2802
```

<210> 749

<211> 1824

<212> DNA

<213> Homo sapiens

<400> 749

```
acaactgtcc tatgcacaac tggaaatgca ccaatcccca acctagtaac tattacataa  60

atttaacaat acttgaattg cagtcaataa atcttatgtc atattataaa ggaaaaagga  120

aataaagtga agatatgttc ttactacaaa tgtatacatg cacaaacacg tttttaacaa  180

aagaaggagg gaatacttat gacaattaca gtcctcattt ctgcagctgg tcacatggtc  240

gtagttggta ttgatgacta tcttcttcta ctacccattc tgtattccct ttgccttcag  300

caagcacctc agcagctcat ggtttttttt ccaagtggag tgaccaaaac cttcattcct  360
```

gtagggtctg ggtcatttgt agtcctgcct ggattgggct gttgtagttt cccattgacc　　420

ttaatcacag ggcatggtaa tactaagaga tgccctaatg gatctcctgt actccatgaa　　480

tactctttct tacctccatt atggagtagt agactgattt catcttgata gtctgggtca　　540

gtcaccccag ccaacactgt aactcccttc ttagcctgtt gacttaaagc taggaggaaa　　600

ccaaagtgtc caggtggcaa tcttaacttc cagtttaatg gaataattgt tgtgattcct　　660

ggtagcagcg ttcctccctc tggaactaag acctctaggc cagcagaatg taatgtcatg　　720

ggaacaaaaa gcaaaaattt tgctagtgga tcactagagg tgatggtgag tggtgccact　　780

tccacttcca tcccttgatt cctagaccag tgaatcctgg ctataggaga aacaatatca　　840

tatattggat gttgatccag agcatacaca accttctaga gaactttgcc ccagccctgc　　900

aaagtattgt cacctagttg gaattgtaat tgtgacttca aaggccattc caccattcta　　960

ccaatccagc tgctttatga tgatgggggaa catggaaaga ccagtgaatt ccatgagcat　1020

gagcccactg cctcactact ttagctgtaa agtgagtgcc ttggtcagag gcaacactgt　1080

gtggaatacc atgatggtgg ataaggcatt ccatgagccc acagatggta gtcttggcag　1140

aagcattgtg tgcaggatag gcaaacccat atccagagta agcgtctatt caggcgagga　1200

caaacctctg ccctttcaat gacggaaggt tttggcctcc ctctccctgt gcaaactggt　1260

aaaaggcctt gggattttttg agctatcctt acccgcctcc ctacttgttt gattttgata　1320

catgttttct aataacctgg ttttttctctt ttcaccttca ggccagcaaa ctccacacag　1380

tcatgcaacc agagcctcag acaatggccc cttctgctga ggacccttaa ataagcttct　1440

gagggagact gctgtttttcc caaaacagcg cccccctgtca gcaggaagca gttaagatca　1500

gtcttcgtcc ttatccttat ccttattcta atggcagtta gatgtacttc ttcagagtgg　1560

cagaattagg tagccaagta agaagcgccc cctggcagaa cctctgacca gcttgcccac　1620

tgggaggagt gcgcactggg gtggaacgtt ggaaagttca caccatttgc atggggggagg　1680

agcctggcct ctcctgatgt ggggcggtaa cctgggattc aatctgtgag gtgggaagcc　1740

agctagcgag actctcactt cgccgagtgt ctctgtttcc cttttttcct tttcacccaa　1800

taaattccat ttttctcacc cttc　　　　　　　　　　　　　　　　　　1824

<210> 750

<211> 2646

<212> DNA

<213> Homo sapiens

<400> 750

gagcgacttc	cggcagctgg	acttggaaaa	gcaaggagtg	tcgggaatgg	cgaccaagcg	60
gctcgcgcgg	cagcttggat	taattaggag	aaagtcaatt	gcgccagcaa	atggaaatct	120
cggaagaagc	aaatccaagc	agttgtttga	ctacttaatt	gtcattgatt	ttgaatcgac	180
atgctggaat	gatgggaagc	accaccatag	ccaggaaata	attgagtttc	cagcagtgtt	240
gctgaacaca	tcaactggac	agattgactc	tgagttccag	gcttatgttc	aacctcagga	300
acatccaatt	ctttcagaat	tttgcatgga	attgacaggc	ataaagcagg	ctcaagttga	360
tgaaggagtc	cctctgaaga	tttgcttatc	tcagttctgt	aaatggattc	ataagattca	420
gcaacagaag	aacattattt	ttgctactgg	gatttcagag	ccttctgctt	ctgaagtaaa	480
attatgtgca	tttgttactt	ggtcagactg	ggacttgggg	gtttgcctgg	agtatgagtg	540
taaaagaaag	cagctgttaa	aacctgtgtt	tttaaattct	tggattgatc	tcagagcaac	600
ttacaagctt	ttctatagga	gaaaaccaaa	aggactaagt	ggtgccttgc	aggaagtagg	660
aatagaattc	tcaggacgag	aacattctgg	gttggacgat	tctcggaata	ctgcccttct	720
tgcttggaaa	atgatcagag	atggttgtgt	aatgaaaatt	acaaggtcgt	tgaacaaggt	780
ggtaccaaaa	ggaatccatg	cagtccccaa	gctttcccac	cagcaaaaaa	acaacccttc	840
actattcatg	aagaaaagcc	tacatcatct	gattgctccc	cagtaagaag	ttcttcctgg	900
aggcgtctcc	catctatatt	aacttctaca	gttaacctac	aagagccatg	gaagagtggg	960
aaaatgacac	ctccattatg	caagtgtggt	cggagatcta	agagacttgt	tgtttctaat	1020
aatggaccga	accatggaaa	agtcttctat	tgttgcccta	tcgggaaata	ccaagaaaac	1080
agaaaatgtt	gtggttattt	caaatgggaa	caaacacttc	aaaaggaaag	agccaacagc	1140
atggttccat	ctcattccac	aggggggactc	acttttagtt	ctccagaaac	aagccatatt	1200
tgtgacagaa	atttaagtat	ttccaccaaa	aattctttga	gactcaggcc	ttcaatgagg	1260
aattgataac	ctttcatgta	tgaatcctaa	ttgttccttg	aatttccaga	catgagtatt	1320
ctgataacat	cttacactat	tttattttta	ttttatatat	taatgtttac	tgcatttacc	1380
atactttctt	caggaaccac	aagtgtaatc	ttttgtaaac	agtatttatt	agattacata	1440
taataagcaa	caatagtata	tgatccttct	tttatagtta	gaccttgaaa	caagtctaaa	1500

ctatttttaa attatttgca aaaaatgtga ctaataaaaa tccctagtct attttcaggt 1560

agattcttgt actttgagat tatcataatc ttctaactga tattttatat ttttctaaaa 1620

acttttataa gttctttagt tttatttcag gcttgaacat tggttctgat ttgtatatca 1680

acatatcaga agaattagtc aactaaagtt tgaaaaccta tgtagcagag atctggttca 1740

gaaactgctt ctatactata catttaaaaa ttaatcagca attgatggta ttatttttat 1800

attaagaaat gataggaaca ttgacactaa tgtggaggaa tttgccaaat attttatttc 1860

aaaatttagc ctctgatatc ataaccacaa gatattttaa atcaacagtt tctaagcata 1920

ctaccacagt ttttatgacc tctccatcat cttgtggttt ctagagattg acagatacta 1980

tgtttgtttt atagatatgg taattaatga aacaacttta aattgtcttc cattctttct 2040

tcctcagttc atttcttttt gtcttcccac tgatagtctt tggcagctct tgaataaatt 2100

ctacctgttg gcatcaaggg gaagaaaatt agcctggaaa tttttatctt tacataaagc 2160

caattatata gcagtttgat tatgaattct aggtggaaga attagaatag tctttggaat 2220

gggttttggg taacagccaa aatagggaaa agggtattgt tatgaaagtt gtcttgatat 2280

taagtattta ctgtgagtcc agtaagccaa aggaccaaac aaaataggtt cagggtttca 2340

ttttaatctc aaagattctg attcttaccc atatgtcatc agttcagttt gggacatgtg 2400

gtgcagcatg tgtgaagaaa atattcatta aaatgtaaaa ataaacactt gaaattgtcc 2460

acaacactga gcaaatattc gttataatta ggatgcctac ctttctggga tatttgtaag 2520

gtgctgtagt tttttaaca tgctcctgaa tctcctttat tagttgttct tgatcatgtg 2580

acttgtaatc aggatttaga acgacaaaag cctttactac ctaaaataaa tatttgaaac 2640

accagg 2646

<210> 751

<211> 2314

<212> DNA

<213> Homo sapiens

<400> 751

attatcaagc tcagatggaa tcaaaattaa atatttgaca acagattcta cagtttgaga 60

gaaatagaaa agtgtttttt tcttttctcc aggtccacaa gtctagtttc ttggactctc   120

tcactataat ggaggttgtc atcagctccc caaaataagg gaagcacaga gcagatggtg   180

gctgaaggtg gggaatcctg tgaaatcata tttaagatca tagcccgtgg tccattgtat   240

tgtaatcagc tggctcagga aagaagatct ggatctcctg agctctacac ctactgcaat   300

ggatatgtca ggagtcccga gaacctctgg ggcccaaacc cctcccacca aaatatatca   360

tccagtattg aggactctga caccaaattc tcacagagca tatgcttatg caattttaca   420

tttaatttct cattacatta caattgggaa aatgaggccc caaaagaggc agggactgat   480

ccagatctca ggaggtgggc aggctccaga gcattagaga gagctccagc ttcctaggcc   540

ttggctccat cccacctatc aggtttgctt tggaagttag agcctgtagc ttcacattca   600

ggggcacaga gaatgagcag atccagggtt ctgttcacat ggggacctct ccatgtcaat   660

ttcaagatga caggactggg gttttgcatc cagctctgag ggcacctgga agtaaaatga   720

gctatgctcc acctcagcct aatgtagaga atgcctgcag gaaagcctgt tttcttcctc   780

ataaataggg ctgtttgaac tgggtgacct cgacgatttc acatactcat aagtgtcttc   840

cagccctgat tcttgctctg agactgtgca gaaatgcatc cactctctgt aggtccttca   900

aatcagaggg aggcatggcc acttcagagg catcttgggt agatgaagat gagacggagc   960

taaatgttcc agagcattgg actctgaggc tgaagtccac ggaaaatccc agctcctgtt   1020

gggttcttaa ggtcctcatt tgaaagtggt agaaactaat ttcactggat aaggggagga   1080

tatctcatgg ataaatagca caacccaaaa ggtagaggca aatagaaggc aaaggggggat   1140

tccaaggtca ctcattgtac ttggggcctt cagattctgc tactttatcc cctaggacct   1200

tgaagaacca gtgtcttgag gacagaaaaa tcaagatacc tgatttgttc catagtgctc   1260

ctgcattggg ccatagagtt agtgatggcc tggaggtggt tacagccagc tctgtttctg   1320

gtgcccactg agctttgctg gagcagctgg aacaagtaag agtcacacat ctcatgttgt   1380

tatcaatgat ctccacatta tcaggtggtc aaaagaggaa gggatattag agatcctcca   1440

tataatcact tagccagtct tttttccctt gcgctcaccc tttgccagct aaccaggtgg   1500

gtgcaacgtg gtacagaaaa ttattacatg atgcctgcac cccccaaccc aggaccaaac   1560

attctgagga cagctggata aaagcactaa agcaagtata tgtgaaagaa aagaggaagg   1620

actataatat aaagtggaat gttgagaaga aaagctggaa aattattgca tgggaggaac   1680

taaggcctca ttgtggtgat gtttaatcca tgataaggat gacaacaggg agacatctct   1740

gcacaagtat gtgtcaggga gaagccaccc ttagtgaaga gactcatagg tgtgagttcg   1800

gcagaggtta gaaagtttgg ctgcagacag cctgaggaag atataagtag agggatggag   1860

aatcctaggg cctgggagat gaggctagat atctgctcct ttctgacaac attgccctaa   1920

aagtcagcac ttttcaacaa catataatat ctcataattt atgtggacca gaatctggac   1980

acagttcagt tgggtacctc tgcctttagg tcttttatga cattgggact gtggtcttaa   2040

ctgaagctgg actgggaaag catgagcctt taagctgact catgtgaaaa ttggcagggt   2100

ttagtgtggc tggagagcct gactttcctt ctctctactg gtctgagcac cccctcaggc   2160

tctgttatgt tggtctttac atggagcatc tcatagcatt gaagcttgct tcctgtgttt   2220

gaggtataca atagagagag agaattagac aaaaaggtgt acacaaaaag agacagagaa   2280

agattgaggg cgcaaacagg aaaaacccag tagg   2314

<210> 752

<211> 2064

<212> DNA

<213> Homo sapiens

<400> 752

gcagccacgg gtcacgccag ggccctgcac accatgcaga ggaaaggaag agctcagtgc   60

gccagggttt catacagccg ctctctcagg ccccaaggaa acgtctagag cgcacaggcg   120

gactcacccc agactgttcg aaccgtccct gagcgcccgc cctcgtctcc cggcaccact   180

ggccccgcag cagccagttg agaagggcgg aggctgattc caatgaagtg gcagaccgtt   240

aggcggcctc tccaaaaagc cagctatgtc gccgttagcc aaggtttgag ggtcttctcc   300

ttctcttcga gggcccaacc tcccctccag atttagtaca ccagaggcgt cgcagcaacg   360

gctgctgcct gcgcgcctca gctaggcggg ctcggatatt tttaaggcca cattggaaat   420

cccgggcatg ctcccgccgg cggagaaggc ccagacaaaa tgtgcgccaa tcaggataca   480

gacttggagg acgtttaccc tcaggaccaa taagagggag ggcggaccgg gccaagggtg   540

ccggttcgct ctccggattt aaacctcagc ggtcggcggt taaccgcagg ctcggcgcgt   600

gggccggcag tgcgcctgcg caagttacgc gaaagctaac agaatctgcg gtgctctgct   660

ggcgactggc aggacgcggt gcagagagcg gacttccgcg acgcgggttt tttttttttt   720

```
acttgaatgt aaataccaat caagatacat tgaaataaga aggtcctaca gtgtagggga   780

agcaatggaa gaacttctac ctgatggaca aatatgggct aatatggatc cagaagaacg   840

aatgttggca gctgctacag cttttaccca catccgtgca gggcagggtg aaggagatgt   900

caggagagaa gcccaatcta tccaatatga tccctacagt aaagcttcag tagccccagg   960

gaagcgacct gctcttcctg tgcaactaca gtacccacat gtagaaagta atgtcccttc  1020

agaaacagtc tctgaggcct cccaaagact ccgaaagcca gtgatgaaga gaaaggtgct  1080

gcgcagaaag ccagatgggg aagtattagt aacagatgag tcgattatca gtgaatcaga  1140

atctggtaca gaaaatgatc aggatctctg ggacttaaga caaaggctga tgaatgtaca  1200

gttccaggaa gacaaggaat cttcatttga tgtttcacaa aaatttaacc taccacatga  1260

ataccaagga atttctcaag atcagctcat ttgctctcta caaagagaag gaatgggctc  1320

tccagcttac gaacaagacc tgattgttgc cagcagaccc aagtccttta ttctcccaaa  1380

gctggaccag ttaagccgaa accggggcaa gacagaccgg gtagcccggt attttgagta  1440

caaacgggac tgggactcaa tacgtttacc tggtgaagat catagaaagg aattacgctg  1500

gggtgtccga gagcagatgc tttgtcgagc agaacccaa tccaaacctc agcatatata  1560

tgtcccaaac aattatctag taccaacaga gaagaaaagg tctgcactcc gttggggtgt  1620

tcgttgtgac cttgcaaatg gtgtcatacc caggaagctt cccttccctc tttctccttc  1680

ttaaatcttt ttaaacttct ttcacaggat tgtttgagat aacctagctc tttatatctt  1740

cccttttaaa tagaaacaac tgtcttgaga agctcttcga aacattttat ggtaaggact  1800

tcacctatca ttggtctttc ctagctatat atcacattgg tatcagatga tacttccaaa  1860

ttgccactca aatccagcaa ttgcaagata aatcatatca gagaaagaac aacagacctg  1920

gtctttctat tttgtcaaat tagtaagggc cctttgtgtc ctgtaacttt ttttacctat  1980

caatatgagt tgctgtgctt cagtgtgtgt tttttaagtt gctgggcatt acacttacca  2040

attaaagaat tttggaaatt catg                                        2064
```

<210> 753

<211> 2187

<212> DNA

<213> Homo sapiens

<400> 753

```
taaaatatct aattttattc aatctttta ttgccttgtc ctccaaaacc aagtgtattt    60

aaatattcca gaatatttct ttcattgact atggaaaact ttgatataaa gctatataat   120

tttggttttt gtttagtatt attcttctag atatgttcta gttgttaact agcctgtttt   180

gtgacatgag taagtaggat tattaagcat gcttgagaag ttatatgtat atatttatat   240

gtttatgtat atatttatat ttatatatat atttatatat atttatattt atgtatatgt   300

ttatatatat ttatatatat attttatat atttacatat atatacttat atatatttat   360

atatatttat atatgtttat atatatattt atatatatat ttatatatat ttacatatat   420

ttatatatat ttacatatat ttatatattt acatatattt atatatattt gtatatgttt   480

atatatattt atatatgtat ttatatatat aaatatatat atgaggggggc ttcaaaatat  540

tcatggaaac attgagttaa aagctacaaa taaaaaatat aaattttatt tctcagagta   600

agctccatca gggtcaagac acttttgtaa gcaatgatac cagacattta ttccatccct   660

aaagaacagg gtcttgggaa tttcaccaca tcagtgccat ctttttaaca ttattaactg   720

aagaaaaatg ggtgctctga cagatttttt taagattagg aaacaaaagt ccaaatgagc   780

caaatcagga cagtaaggtg gatgcctagt gacattccac tgaaactctg gcaaaattgc   840

ccttgtttga tgagaagaat gagcagaagc attgtcatgg tggagaggga gtctggtata   900

gctttcctgg acatttttct gctaaacctt tggctagctt tccccaaaca ctctcataat   960

aagtagatgt tatcattctt tggcctttca gaaagttaac aagcaaaaag acttaagcat  1020

cccaaaaaac tgttgccatg accttagctc ttgactgctt ggctttttctt tgactgcacc  1080

acatcccctt cttggtagcc attactttga ttgtgctttg tcttcaggat cataccagta  1140

aagctatgtt tcatctccta tcacaatcct tcaaagaaaa gctttaagac cttgatctca  1200

cttgtgtaaa atttccactg aaagctctgc tcttgtctgc agctcatctg agtgcaatga  1260

ttttggcacc tatagagtgg aaagtttgct caactttaat tttgcagtca gaattgtgta  1320

agctgaacca gttggaatgt ctgtggcgtt ggctatggtt tgtactgtta atcatcagta  1380

ctcttcaatt agggcacaaa caagattttt tttttccttg caaattgatg tagtttgtct  1440

tctatagtgg gcttcatctt caacatcatc tcatcttttc ttaaaataaa ttattcattt  1500

gtaaactgcc aatttctttg gggcattgcc cccactaaca ttttgtaaag cagcaatgat  1560

ttcctgattt tcccacccaa acttccccat aaatttgatg ttcttgcttt aatttttagca 1620
```

```
gaattgacat tgctctgata agggctcttt tcaaactgat ttcttatctt tttttgtgcc   1680

tcaaaataga tcctgttcag acatgttaca aattagtaca agtttatttt gatataagaa   1740

aaaattgaaa tccatgtata gtttttccat aatatgtatt ttccatgaac tttttgaaat   1800

tcttcatatt tgctgagatg atattgctaa ggagttatat aatataaaaa gttacatgtt   1860

tgtgtgttta tatatgttgc atatgttata tatattcaaa ttatcattgt atctgataca   1920

agtaaacata ttaatttgaa cctaactcta ttcaagtttg taactctcta aatactggta   1980

aggatgattt atctttatgt tatgtttata tattggttgc taagcaaacg ccataaagac   2040

tttaaaagaa cagattactt ttaaatgtaa acatccattt atatttgaaa aaagacataa   2100

gctttaattg acaagctttg taagcctaat tgtgtcatta aaaactcagt agaaataaag   2160

gtatcatatg tactttattc atttatg                                      2187
```

<210> 754

<211> 2762

<212> DNA

<213> Homo sapiens

<400> 754

```
actgacctcc ttcttggtgc tctgacagcg gcagccggtc ctccctcagc tctgcccgcc    60

ttctctcctg ctgctggcca agcccattaa gctgctacct tggccacaac tgaaggcccc   120

acgccctggg aagaaagcta ctgaagaggc gtccctgctc cccagcaccc caaaccatca   180

attaatatta acgagggaag gctcctcatt gcctaaagac cccactgggg ctccaatgga   240

agagaggccc cgcccccgtg actcaggagg ttaaagggcc tggtgccggc ttgtgaggcc   300

agtgtccaga tggcatccag cagtgggagg gtcaccatcc agctcgtgga tgaggaggct   360

ggggtcggag ccgggcgcct gcagcttttt cggggccaga gctatgaggc aattcgggca   420

gcctgcctgg attcggggat cctgttccgc gaccttact tccctgctgg ccctgatgcc   480

cttggctatg accagctggg gccggactcg gagaaggcca aaggcgtgaa atggatgagg   540

ccccatgagt tctgtgctga gccgaagttc atctgtgaag acatgagccg cacagacgtg   600

tgtcagggga gcctgggtaa ctgctggttc cttgcagccg ccgcctccct tactctgtat   660
```

cccgggctcc tgcgccgggt ggtccctcct ggacaggatt tccagcatgg ctacgcaggc 720

gtcttccact tccagctctg gcagtttggc cgctggatgg acgtcgtggt ggatgacagg 780

ctgcccgtgc gtgaggggaa gctgatgttc gtgcgctcgg aacagcggaa tgagttctgg 840

gccccactcc tggagaaggc ctacgccaag ctccacggct cctatgaggt gatgcggggc 900

ggccacatga atgaggcttt tgtggatttc acaggcggcg tgggcgaggt gctctatctg 960

agacaaaaca gcatgggggct gttctctgcc ctgcgccatg ccctggccaa ggagtccctc 1020

gtgggcgcca ctgccctgag tgatcggggt gagtaccgca cagaagaggg cctggtaaag 1080

ggacacgcgt attccatcac gggcacacac aaggtgttcc tgggcttcac caaggtgcgg 1140

ctgctgcggc tgcggaaccc atggggctgc gtggagtgga cggggggcctg gagcgacagc 1200

tgcccacgct gggacacact ccccaccgag tgccgcgatg ccctgctggt gaaaaaggag 1260

gatggcgagt ctggatgga gctgcgggac ttcctcctcc atttcgacac cgtgcagatc 1320

tgctcgctga gcccggaggt gctgggcccc agcccggagg ggggcggctg gcacgtccac 1380

accttccaag gccgctgggt gcgtggcttc aactccggcg ggagccagcc taatgctgaa 1440

accttctgga ccaatcctca gttccgttta cgctgctgg agcctgatga ggaggatgac 1500

gaggatgagg aagggccctg gggggggctgg ggggctgcag gggcacgggg cccagcgcgg 1560

gggggccgca cgcccaagtg cacggtcctt ctgtccctca tccagcgcaa ccggcggcgc 1620

ctgagagcca agggcctcac ttacctcacc gttggcttcc acgtgttcca gattccagag 1680

gagctgctgg gcctctggga ttccccgcgc agccatgcgc tcctgcccccg gctgctgcgc 1740

gccgaccgct cgcccctcag cgcccgccgc gacgtgaccc gccgctgctg cctgcgtcca 1800

ggccactacc tggtggtgcc gagcaccgcc cacgccggcg acgaggctga cttcactctg 1860

cgtgtcttct ccgagcgccg ccacacggcc gtggagatcg acgacgtgat cagcgcagac 1920

ctgcagtctc tccagggccc ctacctgccc ctggagctgg ggttggagca gctgtttcag 1980

gagctggctg gagaggagga agaactcaat gcctctcagc tccaggcctt actaagcatt 2040

gccctggagc ctgccagggc ccatacctcc accccagag agatcgggct caggacctgt 2100

gagcagctgc tgcagtgttt cgggcatggg caaagcctgg ccttacacca cttccagcag 2160

ctctggggct acctcctgga gtggcaggcc atattcaaca agttcgatga ggacacctct 2220

ggaaccatga actcctacga gctgaggctg gcactgaatg cagcaggctt ccacctgaac 2280

aaccagctga cccagaccct caccagccgc taccgggata gccgtctgcg tgtggacttc 2340

gagcggttcg tgtcctgtgt ggcccacctc acctgcatct tctgccactg cagccagcac 2400

ctggatgggg gtgaggggt catctgcctg acccacagac agtggatgga ggtggccacc 2460

ttctcctagg atctccggat gggcgcacct gctgctcagg gcagggttgc tgagcaagac 2520

cacctcccta ggccttgcct ggcatgggtg ccactctctc tggcatccac ctgtctgggg 2580

ctagtctctg gccctcactg ctcacggccg ggtgaccact ctggcctgcg tactcctcac 2640

tcagaaacaa gaacagcgac agcccctctc gagcagatga cacgagctag tccacgttga 2700

cagcttaaga cagtgctagc tctgccctgg ctctcctaga aggtggagga cagacacagg 2760

ag 2762

<210> 755

<211> 2190

<212> DNA

<213> Homo sapiens

<400> 755

attcattcca gggctgctct gcagctgccc aggcagctcc gtgggtggcc actctgctaa 60

cgtgggagca cacgtggctt ccatctgatg agcagtctca gggaagctgg gggcttcaga 120

caccaaatgt ctacttccct ccttgatttg agactctttt ggagctcttg gagacttcca 180

gcagaaacct gagctgccgg ctgccaagaa tcagcggtgg atttcttgac ctgctcttaa 240

taccaattga ataacccctt tgaaaacgtt cacatacatg gggtacaagg tggtaccttt 300

gtgcatgaga ctgttctgga gacggcttat cacccagcaa atcagtgttg gccatctggg 360

actcagcgac cctttctacg aggctatggt gaagtctcac tctgttgccc aggctggagt 420

gcagtggcac gatctcggct cgctgcaacc tccacctccc aggttcaagc gatccttctg 480

tttcagcctc tccagtggct ggtattacag gaacacacca ccatgcctgg ctaatgcttc 540

tctttctata aatgaagacg tgaggccgtg taagctccaa gagagcaggg atcttgtttg 600

tcttggtcac cgtgatattt cagctgctga cccagtgctt gaagcataca atctggagtc 660

tccacaactt tcttcatgga accaccacca ggcccttct gtaggcttct tatggaggct 720

gaaggtgtct acatggcagc ataaagtagt aattaaggac tctggagtca ctgcccaggc 780

tcaaatccct gctgcaaatt gcgaggtctt tgaagagaaa ctgaggccca taaaattgaa 840

tggctcatct cagatcaagt ggccagatca atgaagagaa gtgtccttag gtccggctgc　900

tggtgtgaag tatgctctgg aggtctgaca tccactctcc ctcagacttt ctaatacggc　960

aggaattccg tccatgtata ctcaagctag agttgccaga tgaaatggag gacatggctg　1020

ggtgcggtgg ctcagctcgg agcagtggct cacgcctgta atcccagcac tttgggaggc　1080

cgaggtgggc tgatggcctg aggtcaggag ttcaaaacca gcgtggccaa caagatgtgc　1140

cagttctggt aaatttccta gcaagcttga aggaagtgaa ggacaactgc aaggaagggc　1200

aggatggagc atgcagccca cgtattcccc agcttggtgg ggcagaatgc gttcttggct　1260

cctgaggaat gggcaggcaa cgcacagggg tcctgggaag aaagggagag aatatcctgg　1320

gagagccata gaccctggca ccctcctgtg gtccttcatc aggataaatt tctaaaagaa　1380

gaattactgg ccaaaggatt cctcttcagt tggaaacagc agcaaagttc acaggtcgtg　1440

agtggatgta aagtggacgg aacaggttgt tgccagtcta ttggagtagg atggtagatg　1500

agcagtcccg ttggctaaca ggtgtgggta tgcctgtttt aaaaattagc atgttgtagg　1560

ggaatatttc tcaaactttt gtcacgtatc tacctcttag gcatttttta ctttattcac　1620

ctgtactact atttaatatt tttaaaattc aactgatttt ttttttgct taaatacatg　1680

tctttaaaac tggaacttta ttcgccactg taaatggaaa accagtgtca tttgccatat　1740

atagaagtga actatatagt aaatacggtg aaagtgaaat ggtatcatca cacttgtgct　1800

agattccatt tcctatagaa ggttctgggt ttcttaaaag gcttgttaaa aagagagatg　1860

agtaaatgtg agaggaattt aagacatact agcaccatta agactttctc cttaaagtaa　1920

tctggaggat ttaaattgag aattgaaaaa agtaacttta ttttacataa gaaattatgt　1980

aaaagaatta tgttatttaa tgccacatcc atacgtcatc aagagtcaac ttggtgacca　2040

ctagtggccc atgtcccaca ctttgagaaa cgtgtgttgg ggtgggaatc tgaagtcaga　2100

aaaactggag tatgataacc acctcagcac ttattagagg ccttcacttg ggaatgatga　2160

cccttccttg tagggttgta gtgatagatg　2190

<210> 756

<211> 3625

<212> DNA

<213> Homo sapiens

<400> 756

cactaccatc tttaggttgg atttagaggt tgtggaaggg ggaggtactg ttgaaatata　　60

gtgaaaacct gcttagatga aataccaagg aaagagcaca gtatatcaaa agtgaatgat　　120

ccctaagtac tgtagaaact tagagaagaa atttgatata acctagtatg gcagagaatt　　180

gggccctttc tagggacctt tttactcata ttgccagaac tttttgcagc tgctttaggc　　240

agaatgcagc ctcacagtcc tatcttaagg ggaagcattg aaaccagagt ccattgtcta　　300

ttgccttgga aatgctaaaa aagctcctcg taaacctgtc tgctgatttg gctgtttgtc　　360

cagatactta gtattagaat cactgaacct taatgttggt gttgaatgta ccatttctgc　　420

tacttctcta gttggtatgg gtccttgctg tcccatctgc ataactgcct aggacagcac　　480

tccatgtgtt ataaacattg cttgcatcca aggatagtgg acagtatatt ggctccccct　　540

tcccctgccc tccatattgc cataaaattc ccaaactatt cagtacactt taatttccaa　　600

gattattaat ttgtacagat gctgggggga gaggtagaca attaccatca ttaaaatgct　　660

gcattacttt atatcattga ataatgtcaa acattttta aaattttttt atcatttaaa　　720

aacatctctt taagctggaa gctctttgac atcctttgga acagaaacat caaacagtgg　　780

taccttaccc caaagtagtg cggttggttc tgcctttaca caggatacaa gatctctaaa　　840

aacacagtta tctcaaggtc gctcaagccc tcagttagac cctttgagaa aaagcccaac　　900

catggaacaa gcagtgcaga ccgcctcagc ccacttacct gctccagcag ctgttgggag　　960

aaggagtcct gtatcaacca ggcctttgcc atctgccagc caaaaggcag gagagaatca　　1020

ggagcacagg cgagctgaag tacacaaagt ttcaaggcca gaaaatgagc aactcagaaa　　1080

tgataacaag agacaagtag ctccaggtgc tccttcagct ccaaggagag ggcgtggggg　　1140

tcatcggggt ggcaggggaa gatttggtat tcggcgggat gggccaatga aatttgagaa　　1200

agactttgac tttgaaagtg caaatgcaca attcaacaag gaagagattg acagagagtt　　1260

tcataataaa cttaaattaa aagaagataa acttgagaaa caggagaagc ctgtaaatgg　　1320

tgaagataaa ggagactcag gagttgatac ccaaaacagt gaaggaaatg ccgatgaaga　　1380

agatccactt ggacctaatt gctattatga caaaactaaa tccttctttg ataatatttc　　1440

ttgtgatgac aatagagaac ggagaccaac ctgggctgaa gaaagaagat aaatgctga　　1500

aacatttgga atcccacttc gtccaaaccg tggccgtggg ggatacagag gcagaggagg　　1560

tcttggtttc cgtggtggca gagggcgtgg tggtggcaga ggtggtacct tcactgcccc　　1620

tcgaggattt cgcggtggat tcagaggagg tcgtgggggc cgggagtttg cggattttga 1680

atataggaaa gacaacaaag ttgctgcata gtctacaaac aagtctctga aaataggtga 1740

atttctagct cttcatggtc ctgaacattg atttcagtct ttgcaaagaa tgaagaagtg 1800

aattcgctgt acatttgtca ccagcactgg gttttttgttt tttgtttgtt tttccgctta 1860

atttcaaaga taaaatgcag ttactttttgg gggtggaagg ctcatcttaa aacatgagca 1920

ttaaatatat ttggaatagc agaaggttaa gtaatttctt atgtatagtt aaactaaagc 1980

agtacttcag tgggacttaa caagtatttt ttcatcactg aaaggttttt ttttttttat 2040

cactaaattg tatttggcaa ttgcaagttg cctgcagata gggccgtgat actgtgtttt 2100

gagccacaga aggttgtgtg tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg 2160

tgtgtgtatg tgtgtgtctt tttcctcctt tcttctgggg aatcctgtaa tatgaggtag 2220

cttatttcgt caattaatta gggtgctgga tggtagagaa ttttgtcagt caactatgta 2280

cacacagtaa atactgtttc ttaggcaaag gtaacttttt tatatagttg taaaattcca 2340

ttatattcca ttgccaaaga aacattaaga actttgtata gctgtataaa aagcaactaa 2400

tttttttaaag agtaaacatt ttaaagtcag caaacatact gtgtccttgc agaagttgat 2460

gtgctgagca gcagccttat gggtgggtct ttttttctta gttttccagg cttaacattt 2520

ttgattttgt tttttaatgt ttggaacata aatgaagatt tgatacatta tttcattatc 2580

taaaaaggat taattattca tgctcattgt aagaacttca ttttgtagca aatggcatat 2640

cacaggatct gtccagataa tcgatatttt cagtatacaa atgtaaataa tcacagatga 2700

gaatgtactt agctgtattt tcaaataagt aatcttcccc ccttttgtag gactttaaaa 2760

ctaggcatca atgaacctgt ttttcctatt atgcctggaa tttagtcatg atatcatgat 2820

accttgactc attccatcat atttcaagag gattcagagt gctagaaatt attttggtag 2880

cctgtaacac acggcaacac tggtccttgg gcctatgatg acccacagat gactcagtat 2940

agagttcatt gctaattata aattactagt gaatcttttt gatattttaa gctctagtgg 3000

gaaaaatctg gccacttttg tgtttttatg aaggccatgg aataaaagga tccaaagatt 3060

taaatatttt tatctaatat tttgattgtt ttcttaactt tctccttaaa acattcagta 3120

gtgataaaga tatagaaact gcactgtagg agaattggaa tatttaaggc tggttgacat 3180

tttttatttt cattttatat cttttgtata gctctacaag gcagtgtttt gtaatttggt 3240

ttcattatga agatccagta cttggcagcc atagtttaga caatattgtt cagtgctgtt 3300

tgcttgcatg ttaacaacaa aacctttttag aggacccaca aatcatgata ttgaacacag 3360

ttccgaggca ttcagagcat cagagcaagt accatggcaa tacatgtgta gactgttgga　3420

gatgtcccgg gccaatttca agaaagaaaa ctgtaaatac tagttctact tgctctgaaa　3480

ttatgagttt atgcgttttc ccagccctcc gaatcactga ctggggcgtt ttgtgcccca　3540

gcaataactg gcagcatggc atacctgcag tacccctta c aatattaaag caaagttttt　3600

attctaaaac agaataaaac tgttc　3625

<210> 757

<211> 1923

<212> DNA

<213> Homo sapiens

<400> 757

caggaaagaa acaatcagaa gggtttagga acatccaaat ctcctcagcg gttaaaccga　60

ccccaaacca cttctgggaa accaccggta tccactgctt tggggaactc tggatgctcg　120

ttatgccaaa cgctctcaaa gtaagcaaat ccccaactgc cgttcccctc catgggtaat　180

tcttagggtc tgggaggtga gctcgcccgc cgaggcagaa ctaagcgagt cgcctggaga　240

ggcgtgaagg gagcctgcac gtgtcccccg cggcttcccc accgccccaa gagcggggca　300

tgtacgagac cgcgctgtgg ggttcagatt taggaaggac daccgcgtcg cctgcctccc　360

tccctcgccc agagccggga gcaatgctgg ggcacgaaag aggacttggg aaggatccgg　420

tccttacttt ccccgcgggt cccggacccg cagcccccgg gttgtgaggc ggaagccaaa　480

ggggcgaacc cagcggagcc ggcgtgcaca gaccctgccc cgcggtccaa gagggggtgcc　540

tccggcccgg gacagcgggg ctcccggagc ccgaaagccc cacgagcggc gacagcgggg　600

cccggcgctg acgaacagag gaagcgagta caacggcgcc gccgtcggga acatgccccc　660

gagggccccg gagcgcgcgg ccgcgggggg cggcaagcgg cgagggaggc cccaagccgg　720

ggcgaggtgg ctgtcccccc agcctggccc cgcacggccc cccgaggagg gtgggagtgg　780

gaggctgtcc gggaggggga gtgtggaagg agaaaagggc caagggaagg acttactttc　840

cccgcgggac ccggcgccag gacagctcct cccgggaggt gtgagtttga aggaccagag　900

gcgactggag cggaggcggc ggtggcggcg gcagcagcgg cgtcctgctc tgcctacctc　960

cccgccgcca tcttgacgcc cctcccccag cccccccgcc ccgccgggag gggcggggga　1020

ggggcaacgg atgaggcgcc gcgcgcacgc agcgccctca cgtgacttcc tccctcctcc　1080

cccacccgcc tctctgcgcc cctctccgcc ccgcctccct cctaggtgaa ggaagatgat　1140

ttcccccccca tcttgaccac cccccagtct tcgccgccaa aaacggactc cgccggctat　1200

cctcggcccg gtaccagttg ttggatccaa gagaattccg gaacccaaac ggtccattac　1260

cgcggctctg gggtgggcga ggggtgaggg ggccgggttt ccgcgaaggg ggaggggaa　1320

ggcgaaggcc acctaggaga gtcacgtgac tactgtttcc gcaggcgctc acggagagct　1380

cgcggtaatt ccgtttcccc gccctttttt ccccgcggcc tgtcgggaag aaggtccgcg　1440

tgccagggct atcgggaggt cggccggagg gccgcgcgca tgcgccccgc gcctgctttc　1500

aaactccggc taggaagggc ctggagctat tttcagaacc tgttagggtg gggagctacg　1560

gcccaggaag ttacctagca gcgtttctgt cacttggaag atctcttcat tacctagtta　1620

gtcctagaaa caaaatgttt acatattcat tgcttgttag gctcgctcaa agcactttat　1680

tggcagtgaa accgcaagta acccggagcc ctcggcgcga ccacggctag aatcagagcc　1740

taaggcgtgt gagctcggcc atcccacgtc tgtcttcacg ctcatccgca agcccgacac　1800

accggggctc ccacttaatg aatactgaag agtagggctg tccctaccgc ttctcacttc　1860

cttgttttca tcttttcgtt attattaagc gacctaacac aataaacata ttaccttgtt　1920

ggt　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　1923

<210> 758

<211> 2838

<212> DNA

<213> Homo sapiens

<400> 758

gacgccttt tcagactcag tccgcctgca cccaggtgat taaaaagctt tattgctcac　60

acaaagcctg ttaggtggtc tcttcacaca gaggcgcttg acatttggtg ccatgacttg　120

gttcggggga cctccctcca gagatcaatc gcctgtcctc ctgctctttg ctccatgaga　180

aaatccactt acaacctcag gtcctcagac cagcccaaac aaaacacctc accaatttta　240

```
aattgggtaa gtggcctctt tttattctct tctctaacct ctgtcgctat ccctcaacct   300

ctttctcctt tcaatttcca cgtcaccctt caatctctcc cttcccttca tttccttttg   360

ctttctggta gagacagaga agacacgttt tatctgtgga ctccaaactc tggagctggt   420

cacagactcg ggaagacagt ctttccttgg tgtctaatca ctgcggggac gcctgcctga   480

ttattcaccc gcattccaga agtgtttaat cactgcgggg acacctgctt tgatcctcca   540

ccttggtggc aagtacaacc tcccctgggt ggcaagtacc accccctct cttcgagtct   600

ctacccctc ttttcttgga acttaccttt ttcctatggg caaccttcca ccctccattc   660

ctccttcttc cgccttagcc tgtgttctta aaaacttaaa acctcttaaa ctctcacctg   720

acctaaaacc taagagtctt attttcttct gcaactccgc ttggccccaa tacaagctcg   780

acaatggttc caagtggcca gaaaacggca ctttcgattt ctccatccca caagacctag   840

ataaattttg tcgaaaaatg ggcaaatggt ctgaggtgcc ttacgtccag gcattttta   900

tacttcgttc cctccctagc ctctgctccc aatgcagctc atcccaaatc cttcttcttt   960

ctctcctgtc cgcttcttca gtctctaccc caacctcaga gtcttctgaa tcctcctttt  1020

ctgcagaccc ctctgacctc tctcccccctc cccaggccac tccttgacag gctgaatcaa  1080

gtcccaattc ctcctcagcc tctgctcccc caccttataa ttcttctatc acctcccctc  1140

ctcacactca gtctggctta cagtttcatt ccatgactag ctctcctccc acctgcccaa  1200

cagtttcctc ttagagaggt ggctggagct gagggcacag taagggttca tgtaccttt  1260

tctctatcag accttttcca aatcagtcag catctgggct ctttctcatc agaccccact  1320

aaatatatac aagaattcca atatttgact cagtcctaca atttaacctg gagtgattta  1380

aatgtcatcc tgacctctcc cgtctcccca gatgagcggg aaagagttta taccctagcc  1440

cattctcaca ctgacacctg cttgcatcgt gagccagacc tccaagaagg catcagggca  1500

gttccccgag atgatcccca aagggaatac cagacaggct tcccaggtat agctaggtga  1560

gattacatgg tctcttgcct agttgaaggg ctaaaaaagg cagcatacaa agctgttagt  1620

tatgacaagc ttaaagaagc cactcaaggt aaagatgaaa acccagccca gttcttggcc  1680

cgcttggtgg ctacccttag acgctttaca gccctagacc ctcgagggcc agaaggccat  1740

cttattctca atatgtgttt tatcacccag tcagctcctg acattagaaa aaagcttcaa  1800

aaattggaat ctggccctca aaccccacaa caggaattaa tcaacctcgc cttcaaggtg  1860

ttcaacaata aagaggcagc caagcggcaa cgcatttcag agctgcaact gcttgcgcct  1920

gctgtaagac aaacccccagc catgccttca gcacacaaaa acttcagaac aaccaaacca  1980
```

cagcctccag ctactccttt aaatcctcct catggacctt gattcaagtg ccgcaaaact 2040

ggccactaga ccaagaaatg cccacagccc aggattcttc ctaagccgtg tcccacctgt 2100

gcgggacccc actggaaatc ggactgtcca actaatatca cagccacttc tagggcccct 2160

ggagctctgg atcaaagctc tctggctgac tgcttctcag atctcggctt tgcggctgaa 2220

gactgatgct gcccgatcac ctgggaaagc cccctggacc atcatggacg ccgagcttcg 2280

ggtaactttt acagtggagg gtaagtccgt cccctttta attgatatgg aggctaccca 2340

ctccacatta ccttcttttc aagggcctgt ttcccttgcc cccatagctg ttgtgggtat 2400

tgacggccaa gcttctgaac ctcttaaaat tcccccactc tggtgccaac ttagacaaca 2460

tgcttttatg cactttttta gttatcccca cctgcccagt tcccttatta ggctgagaca 2520

ttttaacaaa ttatctgctt ccctggttat tcctgggcta cagccacacc tcactgctgt 2580

ccttttgccc aattcaaggc ctctttcaca tcctcccttt gtgtctcccc accttaatcc 2640

acaagtatgg gatacctcta cttgttctct ggcaaccgac catgcacccc ttaccattcc 2700

attaaaacct aatcaccctt accctgctca atgccagtat cccatcccac accaggattt 2760

aaagggatga agcctattat cacttgcctg ttacagcatg gcctttaaa gcctacaaat 2820

tctccttact gctcacac 2838

<210> 759

<211> 2019

<212> DNA

<213> Homo sapiens

<400> 759

gataataaga atgcctccag aattacaccc cttgggaccc agatgaccca aaagctgagt 60

agtactttaa tctcacttca tctctcagcc ccagatattc agagaaaact ctaaaaagtg 120

gcaataaatc cacatactcc ccctttccaa ctggtagaca tctcctttaa ggtctatagt 180

aaagagatgt ggcatctgat gaaaaggaag acaagaagat gcggcagccc tacagactac 240

ttcaggaagc ccaggaagaa gatggcatgg gtgagtgacc agggcccccca ccatggaact 300

cagggcctgc ctacactggg gcccaaacaa tatgcttact ggaagcagaa aggatgctag 360

```
gaaagggaat gtccaaatca tccccagaga gggaaggagg aggacaagcc caaggtacct   420
gttccctgta actggacaag aaactgatgg atggggacat ggggctccct gcctggctcc   480
tcaaaacaag atccacatct cccccaagga gccccaggtt acacagaaga aggggggcaa   540
ccagttggat tttttttcgt ttgtttgaga cagggtctgt gttacccagg ctggagtgca   600
gcaccgtgat catggcgcac tgcggcctcc aactcccagg ctcaagcggt cctcccacct   660
tagcctctca agtagctggg actaaggcac acctggctga ttttttttgtt tgtttgtgga   720
gacggggtct cgttatgctg tcagggctgg tcttgaactc ctgggctcaa gtgatcctcc   780
agccttggcc tcccaaagtg ttggcattac aggcgtgagc cactgctccc ggccaccagc   840
tgagtttttg atcaacactg tagccatgtt ttctgtgttg atcactaaaa gtggaccta    900
tccaggaaga aatgtatata aggggtgtgt ctcataaagg aaataaaaga ttcttggagc   960
ctctggtcca tgaaatagta tctaaaactt tcactcattc tttcttctgt tccccaaaca  1020
tcccattctc cttttgggaa gggaccttct gactaagttt ggagccacaa tttctctaaa  1080
tcaggacaga atagaggtgt tctgagccca tggcactgcc atgctggccc tagttcctgg  1140
ggaagttcca gacttggggc ctcatatgac tccttggcta atgcggtact agataattgt  1200
atagcattag actgcctctt agcagaacag ggaggaggag agtgtgcagt tattaattcc  1260
tcttgctgta cctgaataaa tacctcaggg gaaataggaa gttaacatta ggaaggtcca  1320
tgcccaagcc tcttggttcc acacttttaa tcagcagcca tatttttttt tttttttga  1380
gacagtctcg ctctgttgcc caggttggag tgcagtgggg cacgatctgg gctcgctgca  1440
acctctacct cctgggttct agcgattttt ctgcctcacc ttcctgagta gctgggactg  1500
caggtgcgcg ccaccacgcc tgcctaattt ttgtattttt agtagagacg gggtttcgcc  1560
atgttgccca ggctgatctt gaattcaggg tgatccgcgc gccttggcct cgcagggtgc  1620
tgggattaca ggggtgagcc accacatcag gcctaatagc catacttcta actctgtttg  1680
agaagttctc aaattagcaa taccaagtgt tacttggttt cttcccctaa tgaggccact  1740
aattttattg ctcttactac tgttgtttgg tccctgcatc tttaacctct tcgtaaaatt  1800
tgtatcttcc agattagaaa aatttcaact gtaggtgcct ttgcaaccta tcctgggaga  1860
ccctaaaaca tatttagttt tagtgcctag agattttcac tcctctaaca tctctggata  1920
cagtgtccct ggtcaacatg aagaagttac agaagaacgc tttctgatcc tggcccctaa  1980
agaatttact tgtgctaagt aataaaattc ctattgatc               2019
```

<210> 760

<211> 2701

<212> DNA

<213> Homo sapiens

<400> 760

```
tttgattcga ttcaggtgcg ctttggcagg agcacggcac agtgattctg tcctctcagt      60

atcctccgtg ggaggcacat gctgtcactt tgtcccatca tcatgttgtt ctgggttatg     120

gtggagataa ctgatctctt ggaagtgcca cctcctctcc atgagtaatg actcacctgt     180

ggggaggtgc tttgagacta tcttgtcagt ccacaggcag actcagtggt cttggcatct     240

tcggggggcag acccagtgga cttggcatct tcgggggcag acccagtgga cttggcatct     300

ttggggaatt cttgcctgca ttagtgttgg ctgtgatgat tgtaaaatgg aggcttctca     360

actcatcatt tcttcagcat ttgccactcg gccttctctt tatttcatgt cagtgtggct     420

tctaggggtt agagttcatg actgttatca tttattttga tgttcacttg gcccagatat     480

ggccagaaag actccctcca ggctggcttc tgggtcctct tgccattcgt tcatgtctgt     540

gccactctcg ggcactgcac actgtctgtg gctcatgtgt tcacttcctg ccccacttct     600

ggaatcagcc atttctccga ggagccctgc ttccggctga tggggaacag cacatagaaa     660

ccacgacctg ggcaccaaga atacacctct gctgctgggt gttgtccttt ctaggccctt     720

tcagcagaca gagctaggag ttgaatttta aaaccaagag ttcatcatgg tgcccgtcac     780

attgcagcac cacggggggtc tttgcccacc atcagcccac agttgctcct tcctcccaca     840

gtgccaagta gctgggggact tgggaacgtc agcagtgctg ttcttatcaa agtttcctgt     900

aaccctgtct ctcagcagtg atttaagaaa ttaaggcttt tcactggttg tcaattttct     960

ttgcctccct ggggctgaat acagcctgtt gtttcaagta tctaaagtgg cttaaaagaa    1020

acttctccat aaaccgaata gcacatcgct agagactctg agaaaagtac tacttagtga    1080

taattgctat agaatatgtg acaaaatgtg ctttcgtttc aaataaagtg gagatttatt    1140

cagaaaagtg gagtgtagaa ctacactgtt aaatagaagg atcacaacaa tgtactcgat    1200

gtattatttg tcccttttgg taaacgtaat gagtgaaatt gtaagtcaaa gctgaagctc    1260

ttttcccctcc atttcatcat gaagctcttc acatggacag caaagctgca ggatttgtgtg    1320
```

gtgcgcgctt gtatacccgc cacttcagcc gtgtcgccat gctttgctgt gttgcatttg 1380

tccaggtgtc ccccacagcc ttccacgcct gcgtgaatgt cagtcacaga cgtgagcgtc 1440

agtcacagac atgagcgtgc tctcctgcct tcaccatgcc tgtcagggac cagagttcag 1500

cagttgtctt gttttttctt ttgagataca tttttcatac gggaatatgt gggaaactta 1560

attgtgctgt tcagtgagtt acacccacat agccgcgacc gagacagacc ctcgatctgg 1620

aagattcagc ctcccccacg catggccgtc ccccaggcag ccattgcccc cctccctcca 1680

tacgtgagtc tcaccttttc tagagcggca tagccacgaa attacacggt agggtctttt 1740

gtggaaggcg tctttcgctc acatgatgtg cttcagactc atccatgttt tacatagagc 1800

agttcgtttc tttttatcgc tgaacagtgt tagtgattgc acagccgcct agctcacctc 1860

caaaggagag acacgtaaaa cagccttttg tgtttggaat gccttttcca gaagatccct 1920

tgatacgaga gccgcatgtt tgctattctt gatgccctgc tggtatcgtg tgagtgttcc 1980

agtctgtctg tccaccctcc tacagagtga catctgggct gtgttcagct tggggctgtc 2040

acggagcctt cctgcgcagg tccatctgtg gatgcaggcg cctttctcc tggatgaaat 2100

actaagagtg gaattgctga gtcataggtg gtcgcatgtt tgtttaggag cagctgccag 2160

accttctttg caaatggttg agccatttgc acttccacca acactgtgtg agagttctgt 2220

tgctgtacat ccttgccaac atttggtatt gtcattctct ttaattttag ccattctggt 2280

aggtgtgtag tcatctgtca tttggagttt taatttgcct ttgtctggtg actggtgatg 2340

agcacagagc tcttttcagc gtgcactgtg tttgtgtgtg tgtgtgtgtg tgtgtgtgtt 2400

atgggattgg agtaggcagt ctgtgtgtgt gtgtgtgtgt gtgttacggg attgggggag 2460

taggcagtct gtgtgtgtgt atgtgtgtta tgggattggg ggagtaggca gtctgtgtgt 2520

gtgttacggg attgggggag taggcagtct gcgtgtgtgt tacgggattg ggggagtagg 2580

cagtctgcgt gtgtgtgtgt gtgtgttatg ggattggggg agtaggcagt ctgtgtgtgt 2640

gtgtgtgtgt gtgtgtgtgt gtgtgtgtgt gtgtgtgtgt aacaataaat tactaccagt 2700

c 2701

<210> 761

<211> 1932

<212> DNA

<213> Homo sapiens

<400> 761

aaacttgctt ctttcttaag caatatgttg ggcataagga aagttcatgt tatcttagaa   60

tattaggaca gtggcttctc cattctggct gtgcatcaga atcacttgta gtctgttaag   120

taaaaaataa atgcctgcca tgtcagaaac tcctacattt tctaatttgc tatctctgat   180

ttgctgtgcc ctgagaaatt agatggccaa atatgttaga attcagtcta aaatgaaagt   240

gactaggttc tgagtgagaa ccatgggaat atgtataaag gatgtgtgtt ttcttgccct   300

gacactagtg ctgtttcagt tccttggtgg cttttgttgt ttgcttcttg gtgctaatcg   360

ttttcaacag atacaatcac ttctgaggag ctgctgtatc atagaaatga aatgttcttt   420

actctctaac agaaagtcct ctttccaact caaactggtc tttactggtg tttatccttc   480

gaaagggcaa cagaacaagt tcttgcagag gtatttagca atgtttaagg ccttaaaatg   540

gaactatttg tcagttatga ttggtggcac ctctgcactg caaacagtac aaaaaccaag   600

attctcttta ttctcctttg taagtaagaa ttctaaagat ctataagtga gaacacataa   660

aagtgttagg ttaaatttat agtgtagcca ttggttcaac tttctctttc tacatttggt   720

tcagtggctt tttttcctag cattttttt ttatcatttt ttaaaaagtt ttgaatataa   780

cttttctgta atgtatcccc accacccgtc tgtcaaacca cgaagattgc tacatgtatt   840

tttctttatt ccttgttcta aataagattt agcacagtgg tgtttcattt ttttctttat   900

gcttttttt tcttctttct ttctttcctt ccttccttcc ttccttcttt ctttctttct   960

tttctttctt tttttttttt tttgagatgg agtcttcctc tgtctcccaa gctggagtgc 1020

aatggcttga tctcagctca ctgcaacctc caccttctgg gttcaagcga ttctcctgtc 1080

ttagcctcca gagtagctgg gattacagac atgcaccacc atgcccagca ggttttttgtc 1140

tttgtgtaga.aacagggttt caccatgttg gccaggctag tctcaaactg ctgacctcaa 1200

gtgatcctcc tgccttggcc tcccaaattg ctgggattac aggcatgatc caccacgccc 1260

agcctctttt gtttttaaga cagggtgtca ctctgttgcc caggctggag tgcagtagcg 1320

caatcttggc tcactgcatc ctctgcctcc caggctcaag tgattctcct gcctcagcct 1380

cccaagtagc tgggactaca ggcgtgtgcc cgctaatttt tgtatttgta gtagagatgg 1440

ggtttcacca tgtggccagg ctggtcttta actcctcacc tcaagtgatc cacccacctt 1500

ggcctcccaa agtgctgaga ttataggcat gagccaccac acctggcctt tttttttat 1560

```
ttttttacttt tttgctaatt aggtcaaggg ttaattttat aaacaagact gaaatatttt   1620
gttgatttaa atgttctggt tgactctctt tttaacaaga agtgaaactt ttactatata   1680
ttttatataa ctccttatta aaatgaaata catttattgc aatttatact tgagatacaa   1740
tactatacat ttaagttgta tattactttt gtaaccata aaaaaattta ttgggaaaat    1800
gtcaaaagat ggtttgtaga ttctagttac gtgcctggaa agaaagaaaa atactttttt   1860
attatttggg tgtaattctt ttgaaacttc aaaggaaata atcaataaaa tgtaacatgc   1920
ttttcaaacc at                                                       1932
```

<210> 762

<211> 1645

<212> DNA

<213> Homo sapiens

<400> 762

```
agctctggga gaggagctcc agccttggga ttcccagctg tctccactcg gtgatcggca   60
ctgaatacag gagactcacc atggagtttg ggctgagctg ggttttcctt gttgctatt t  120
taaaaggtgt ccagtgtgag gtgcagttgg cggagtctgg gggaggcttg gtccagccgg   180
ggggggtccct gaaactcccc tgtgcagcct ctgggttcac cttcagtggc tctgctatgc  240
actgggtccg ccagacttcc gggaaaggac tggagtgggt tggccatatt agaagcaaag   300
ctaatagata cgcgacagca tatgctgcgt cggtgaaagg caggttcacc atctccagag   360
atgattcaaa gaacacggcg tatctgcaaa tgaacagcct gaaaaccgag gacacggccg   420
tatattactg tactagacat ggaaatgact tacctggaac tactgccctt ttgggtatgg   480
acgtctgggg ccaagggacc acggtcaccg tctcctcagc ctccaccaag ggcccatcgg   540
tcttccccct ggcaccctcc tccaagagca cctctggggg cacagcggcc ctgggctgcc   600
tggtcaagga ctacttcccc gaaccggtga cggtgtcgtg gaactcaggc gccctgacca   660
gcggcgtgca caccttcccg gctgtcctac agtcctcagg actctactcc ctcagcagcg   720
tggtgaccgt gccctccagc agcttgggca cccagaccta catctgcaac gtgaatcaca   780
agcccagcaa caccaaggtg gacaagaaag ttgagcccaa atcttgtgac aaaactcaca   840
```

catgcccacc gtgcccagca cctgaactcc tggggggacc gtcagtcttc ctcttccccc   900

caaaacccaa ggacaccctc atgatctccc ggacccctga ggtcacatgc gtggtggtgg   960

acgtgagcca cgaagaccct gaggtcaagt tcaactggta cgtggacggc gtggaggtgc   1020

ataatgccaa gacaaagccg cgggaggagc agtacaacag cacgtaccgt gtggtcagcg   1080

tcctcaccgt cctgcaccag gactggctga gtggcaagga gtacaagtgc aaggtctcca   1140

acaaagccct cccagccccc atcgagaaaa ccatctccaa agccaaaggg cagcccgag   1200

aaccacaggt gtacaccctg cccccatccc gggatgagct gaccaagaac caggtcagcc   1260

tgacctgcct ggtcaaaggc ttctatccca gcgacatcgc cgtggagtgg gagagcaatg   1320

ggcagccgga gaacaactac aagaccacgc ctcccgtgct ggactccgac ggctccttct   1380

tcctctacag caagctcacc gtggacaaga gcaggtggca gcaggggaac gtcttctcat   1440

gctccgtgat gcatgaggct ctgcacaacc actacacgca gaagagcctc tccctgtctc   1500

cgggtaaatg agtgcgacgg ccggcaagcc cccgctcccc gggctctcgc ggtcgcacga   1560

ggatgcttgg cacgtacccc gtgtacatac ttcccgggcg cccagcatgg aaataaagca   1620

cccagcgctg ccctgggccc ctgcc   1645

<210> 763

<211> 2222

<212> DNA

<213> Homo sapiens

<400> 763

ctttcgcacc atcaagggac ttctgtagac tctgtacatg agttcaggga tcaccagaga   60

cccccttttt atgagttccc gtgcagtgga gctgctgagg taggattaat ttctctgcct   120

tcttcccctg ccatagacaa tgtttaacct gattatgctc tgcaggcaag tagccaccct   180

tggatattaa tctccttatc gaataagata aactgtgaag aaggcatgcc gtaaaggagg   240

gaatgcaaag ctagaaaata tgttcgaatc tgtcatggga agcatggagg gagaaatgaa   300

gatgtgtgga catctagtat tttctctgct ttcccttctc tctggtcctt taaaattttc   360

aattctcctg aaaagaaaaa ttgtatcttg tttttgtgaa gccatttcca gcatgaaaac   420

```
aattccattt gacagtgtaa actgtcctat gcttagctgt gtgcttgccc tgcactccct    480

ccctgccccc aactgtgtga aacagatgcc tgcagtgaca ctgcccatca atcaccccac    540

aggaagcagg gcacaattca aaaccccaaa atgcagaaac gtgttcacct gtgccttcca    600

cacagtggtg gggtaggtag gaagcctagg gtattacttg gaaaacaagc aacattttaa    660

gacagattaa gtgtaaactt ctttgctctt ttctctggca tagttttgag aaatcaccac    720

taattggata cattgtaatg tacagataaa ttttcttctt ttttactatc tcatttacaa    780

tttaatatct aacatacaaa agttgatcaa aggcacaaaa acactagata aaaggttgaa    840

tatttaatac caacccttct gagttaatta ccagatcctt gtttttcagt aggaggccag    900

caagttagga gttaagatga aaggagtcct agatttaacc ccaaaagacc ccccttcaat    960

tttagccagg tcaggcccac aaagagatgt agatgtaaac tgattatgat gctaagtgtt   1020

tgacagggat cctctttgtg tccagggcca gtcaaaactt gaataatagt atttccgaca   1080

aaaagcttgc cccctttgct ttttaatggt tcattttaat tatttctata aatctgcttg   1140

agaaatatta agattctgat tgttgtggac tggtttatta tttgctacca tacccgaagt   1200

atttgccttc tcattataga agcttagtgg aaagaactgt ccagagctag ttcactaaac   1260

taagcacaca ctcgatttcc aaggggagca gaaagggctt taccaattgc taagtcacca   1320

acatgtccct ttgcccatct ttctatgtcc tacaaagact tatgtggggt gtgcacatag   1380

tatttcccca gggaaacaca cacacacaca cacacacaca cacacacaca cactctttct   1440

ctctctctct ctctctctct ctaatattgt tgattgatta ggtttgtttg gagactgctt   1500

aaactgtgtg tgttatggtt tcaaattact gtttgctctt ctaacttctt agaagggtaa   1560

acaatttgaa aacagtttaa acccatagca aaagaaactg gcatctgaca aactctttaa   1620

cttaattcct cttattaaga ctcatatact gttttctggt ggtaaataat ggaaagaaat   1680

gataggtttt gatgttatat tttacagcta ttttttctcct caaggtttga atgttataac   1740

agccagaccc tacacaaaca ccaaccagtt ttctaagcac tgagtcaatt gtaaactaaa   1800

aagagctcta gctggaggtt ttctgggtga aagctcagtg atatctacag tttttttttt   1860

cttagtctcc tcttccatct ccagcctcta aaacacacac acacacacac acacacacac   1920

acacacacac acacactcac gaaaaacaaa tggatggaca atttgctcta aggaaataca   1980

gtatagatag gcaggcatga gagtcatcac attatcttac tacctcattc ctgtatgttg   2040

ggtaaaggtt gtcttttaat ctctcctacc ttcaaacaaa tcaggcacta ttgttgacaa   2100

aatacccta tttacttctg gcaaggcaaa tgtcattgat gctaccttag atactaacat   2160
```

cacatgtgga agcattttct attttaaact ttcaaccctg tctaaaaaaa aaaaaaaaaa 2220

ac 2222

<210> 764

<211> 2245

<212> DNA

<213> Homo sapiens

<400> 764

ctgggcctca ggaagcagca tcggaggtgc ctcagccatg gcatggatcc ctctcttcct 60

cggcgtcctt gcttactgca caggatctgt ggcctcctat gagctgactc aaccccctc 120

agtgtccgtg tccccaggac agacagccat catcacctgc tctggagata aattggggga 180

taagtattct ttctggtatc agcagaagcc aggccagtcc cctctacttc tcgtctatca 240

agataacaag cgaccctcag ggatccctga tcgcttctct ggctccaact ctgggagcac 300

agccgctctg accattagcg tagcccagac tatggatgag ctgactatt attgtcagac 360

gtgggacaga agcactgcgg tgttcggcgg agggaccaaa ctgaccgtcc tacgtgagtc 420

tcttctcccc tctccttctc cactcttggg acaatgtctg ctgattttgt ttgtttctgt 480

ttgtttctct gtcttgcctc acaaattccc cctgcatccc cggcctgaac aaggacctcc 540

gccctccctg ttcagaccct agcttggatt tgtttgcttc tgtatcttgt ctcaacttct 600

ggtcatgcct tcccccctgca tcccaggcct gagcaaggtc ctccgccctc cctgttcaga 660

ccctcccttg cctcaaaagg tcaatagact cacgcaggga cagcggacta catagaatga 720

cctactgagc ctcgcctgtc tgtctttctg tctctctgtt tgtctgtctg tctctctgtt 780

tgtctctctg tctgtctgac aggcgcaggc tgggtctcta agtctttcc tgttatggca 840

ttttcagtct gggttcttgt cggaacacct ttgaccttgg gttatctgac ttccatctcc 900

tggggaattg gaacatggg gtctgaggga ggcacctcct gggaggcctt agaaggaccc 960

agtgccctcg gggctgatac tcgggaatca cagagctgcg gcccagagcc aggatccaga 1020

cccagagtga ggtaggaggt ggaggggctg ccctgggcgt ctgggggctg ccagggactg 1080

agccctgagc cagcctgaga ctcaggaaac cccgtcagga gggagaaggg gaagggtcac 1140

aaaaggagag tatgtgacgg aggggcgggc tcctgggtct cttcagaaca tatcccctgt 1200

gcccagggag atcagagggg cagagtccac tgcgtggaag ccccactgct atgaccaggt 1260

agccgggacg tggggtggat gccagaaaag actccacgga ataagagaga gcccaggaca 1320

gcaggcaggc tctccgatcc ccccaggccc ttgccccata cacgggctcc agaacacaca 1380

tttggctgga acaccctgag ggaccaaaag gccccagtat cccacagagc tgaggagcca 1440

ggccagaaca gtaacctcag agttcgctgt gcaggggaga cacagagctc tcttaatctg 1500

tcaggatggc aagaggggac agggtcaggg cgctgagggt cagatgtcgg tgttgggggc 1560

caaggccccg agagatctca ggacaggtgg tcaggtgtct aaggtaaaac agctccccgt 1620

gcagatcagg acatagtgga aaacaccctg acccctctgc ctggcataga ccttcagaca 1680

cagagcccct gaacaagggc accccaacac cacatcatat attgaggtca ggggctcccc 1740

aggtggacac caggactctg accccctgcc cctcatccac cccgcaggtc agcccaaggc 1800

tgccccctcg gtcactctgt tcccgccctc ctctgaggag cttcaagcca acaaggccac 1860

actggtgtgt ctcataagtg acttctaccc gggagccgtg acagtggcct ggaaggcaga 1920

tagcagcccc gtcaaggcgg gagtggagac caccacaccc tccaaacaaa gcaacaacaa 1980

gtacgcggcc agcagctatc tgagcctgac gcctgagcag tggaagtccc acagaagcta 2040

cagctgccag gtcacgcatg aagggagcac cgtggagaag acagtggccc ctacagaatg 2100

ttcataggtt ctaaaccctc acccccccca cgggagacta gagctgcagg atcccagggg 2160

aggggtctct cctcccaccc caaggcatca agcccttctc cctgcactca ataaaccctc 2220

aataaatatt ctcattgtca atcag 2245

<210> 765

<211> 2128

<212> DNA

<213> Homo sapiens

<400> 765

aggggtgaat aaggcggaag ctgaggggac agtcacagcc aggacaggaa tgtcaccccc 60

agctggcaga cagcactctg agcagccagg cctgggatcc tctgacctgc ccacttcagg 120

aggccagtgt ggtcactgcc accccacggt ctggggaccc tggactccaa acttgtaagt　180

gctagagtgg gcagctggag gccatctggg cactttaaaa cacaggtact cgggaacaaa　240

cctctgatgg ggtgggtggg gtgagggatg ggggaccttg ggtcccaggc cctctgtgat　300

tttctgatga acttccttct gtgggagcgc tggctcaggg agctcctggc ctctcctcct　360

ctaccacttc ctccgccacc cgcctccacc tgctcccggc ctgatgtccg cagggtcatg　420

tgtgcagtag tcccacgtcc aggctcactg cagaggcagc cctcttcaga caggaggcag　480

aagagagggc ccccgcaagt tagcttttac tttaatatta ttatgtcatt atgtgtatta　540

ttattgtcat caacatcttt ttattctgca aatactaatt tcatatccca tatgggcagg　600

ctctgtgcaa ggtaaattac taagtttgt taatgaagtc aaacaaagtc atgggttcta　660

taagaagaca actattttaa aatatggcat aaatgacatt atatagttaa gatagtataa　720

agacacgact tggaacaagc aaacgtggga acaaggcaag gagaacgtgt agcttccttt　780

tggagtgctc atactaattg ctgatgaaac atttctgcac tcggcaggga atcagtccac　840

agccccctc tgattaaaat gcgacccagc ttggactctg agagcaaatg tcccagcgcc　900

cctgggaaga agtgatgcaa tcctctcttt gagctgttta tcatttctga gaagcaatga　960

catagctgcc tcttgcagtt tggtctaatt acttgtctga tctcccccag ggagaagcag　1020

ctctgttctc ccttggcctc cagacagtgg ggcccacagt ctctactgga ggagtggggc　1080

cggccatcgt gggcagggga ggtggagacc ccttgaagct gatctgtatt gcagggtgtg　1140

gagtagggct ggggggttcct gggcctctaa tctttaaaat ccagcaagaa ggtagtgtac　1200

tgtgagccag gcccatcatt ctctttcctc cctgaaacca tcgatgagtc ttcccctaag　1260

ggctggaggg gagggtcccc tttctttgac ttcccttgca gttcctctga tgctgaagag　1320

tagggcttgc agggactctg cctcctgcag ggagcagcca ctgtttccag ggaccctcac　1380

agaagaggag ctaatttcac actttgggac tccatagaag ccagcttcct ggcagtttga　1440

agtgtgcttc tcacacatct tccaccagct tgtttgtctg cctatatctg aggatccttt　1500

aaagcgattg aaacaaaatt aagggcagaa tgaatctttg gtgatgaaag tgagaatctg　1560

ggagagatgt gaaaactgga agagaaacag gaagtacctc caggattcac ctaaatagat　1620

gctgcagttt ctatcaaacc acaggccacc ccagcatctc agtggcttct ataggttgtc　1680

ctgaaagagc catgaggcca gggcccttga tggattccca gataccagct gctcctccag　1740

acaccaattc caccctccac ctttctgtgt ccgtcccaga ccaaggcagc ccaggtaagg　1800

agccatgggt aggaggtttc ccagtgggta gaggtgccag actcagcagc tagaaatata　1860

gaatgctggg ttaaatgtaa atttcagatc aatgataatt ttttgggtaa gtgtatccca   1920

tgcagcattt gaaatacaat ttaatcaaat ttaactagat gtcctgcatg ttgtaggaaa   1980

ctctctagga ggtgtgtctc caggataggg ccagtggaga atggcagccc acactgttat   2040

gggatgaagt gtgtccccca aaatcaacat gttgaagctc taacccccag aacccctgaa   2100

taaaactgta tttggagtta agatctttt   2128

<210> 766

<211> 3785

<212> DNA

<213> Homo sapiens

<400> 766

acagaaggaa gagcgcgaaa ttgcccagga tggacacttt caaaggggcc ccagcggcta   60

agtgactctc agggaaggtg gccttgccat cccaacttct atttaggggc aaccactagc   120

aagttcttct cttcgggcaa ttggaaagag ttcctataag caaagtggag gtgatgtgga   180

cccctggaaa atttccttgc cccgtttgaa ctttgcaatg attcactgca agtcatgtcc   240

acgtggaaag caagactcac caaaagactg aagtctccct ctagaagcat gcatccattt   300

ccgtgctcag ctctgctcgc ctgttttggg aatacgaggg agagtgcttc cttcaatcag   360

tccggcgtgg ctgatactca ttccaccgtc cgtgtgcagc ctgtggccaa agcaggcaga   420

cagccaagac acccaagcgc agaaggagct ccagagaaaa ggcaagattc gagcacccat   480

gcagagagaa atggcagtgc gaatcggaat tcaagtcacc gcactgcggc ccagcccgcg   540

gagacgcctg aagatgtgcc cgggtccctg gatgatgggg cggactgtga agcagtggtg   600

tttcacgctt ccatccccag accatcaatt attgacacgc ccaaggaaga agaatttcga   660

gaagaaccta aatgcctcga gctggagcag aaaatgacat cagacagccc acctgaggat   720

attgaccata aggactcata tctcattaca agaagcatca tggccgagcc agactacata   780

gaagatgaca tcctgaact cattaggcct cagaaactga tcaatcctgt aaaaaacctcc   840

cggaaccatc aagatcttca cagagaactt cttatgaatc aaaaaagggg tcttgctcct   900

cagaacaaac cagaattgca gaaggtgatg gaaaaaagaa aacgagacca agtaataaag   960

cagaaggaag aagaagcaca gaagaagaaa tctgacttgg aaatagagct attaaaacgg 1020

cagcagaagt tggagcagct tgaacttgag aagcagaaat tgcaagaaga gcaagaaaat 1080

gcccccgagt ttgtgaaggt gaaaggcaat ctcaggagaa caggccaaga agtcgcccaa 1140

gcccaggagt cctaggctga ggctgcacca agacctcgtg tgtcacccca cagagctgtc 1200

tgtgggtgcc ttctcaatct cagggcaata gcccctggag aatatttcag ccagcagaga 1260

attttgactt gcagtaggat ttggtttgat tttcctacga tctgggtgga tgccttgcct 1320

gtgacagttg cagttcctat tcgccaaatg aagggcagtg ccccgcacgt aagttggaat 1380

gatggacctg tgttcagaga cttaacagaa ccaacaagca aaacaagtga gaacaggaaa 1440

aaggaagagg acactggaat caattcttga gagttgcact acttggtttt tcttccattc 1500

caagtttcgt gggacccaga gccttttttc ttttaaaagc taaaaaacaa gtgtttaatt 1560

cctctttttg ttatctgtta gataattgag atcacctaga aatgcgttta atctgttcac 1620

tcactgtaaa ttttgaggac ccagaattgt cttgtttaat ttatactttc acccctgttg 1680

cagttaacac cagagaagga acgtgaatgt cgagcacagc cactaccctt gttggcactt 1740

aatttagaaa tagggtgaga agtttaaaag cccatcttga ttttattttc attccttttg 1800

gttctctgtg taataatagc aggctacata gtgacattcc agttccaaga aggtacatcc 1860

tgtccattca ttaattgctt tgattactag gagggtttct gttcagtttt gtttttaaat 1920

gtcttgctga tctagttctt tcagatggaa taaccttcca gtcccttaga gagtggaact 1980

agtccatata acccagcttc agtagcaaaa gtagaagccg ccacatcttt tcatttctcc 2040

aagaggagag tggggaaggt tcccatgacc agctgggcag tcaggatttc tctaggcatt 2100

ctaatgtgaa ataagtgtag actgctgtca aggaggcttc atcagaagat gtatagcatt 2160

tgaatgtcta atgataatgc atatcattag aatccaagct ttgaaaattt ctgattaatg 2220

ctcatgtatt tctttatctt tgttttttcct tgtgaagaaa gactttcacc actgtctgag 2280

tgatgatgct gttgataagg atgatgtcga tgactactat attgcatctc tcaggaacag 2340

ctgatgggaa gggaggggct gctgagttcc cttgttctag ctagcagcac gctcctcaga 2400

gaggggggccg agttacagac agcagccgca ttctcatgca aaattagttt taaactgcta 2460

gtgtgggcat cggtaccttt tgcctgggtg ataccgaaga attgttgagg atttagtatg 2520

ctccgtagag acagttcagc cagtcatttc tgcattggag agacttctca tactttcttt 2580

gaagactcat agaaagctgg atctagagct cttgaatcct taattagcac agtagaaatt 2640

agctttctat gggaatgctt tagtgttagc agttgacaat taggcccata ttcaatctga 2700

atgggaacaa aagtaaatgc aatgataata tactgctagt tagagaaaca tgttagttga 2760

ttatacctga aatggattat ttatctcatc agcaagtatt atttgaataa aatgagaaat 2820

gcttaagaaa aattgttgct ctacagtaat ttggtttcga agaatggaat ggtaactatt 2880

ttttcccatc gttcttttga gagaaggaag tgtgatgact gatgatcttg aaaagcccat 2940

ttctgattgc acgttgactg gaattctttc tttgtgtctg tggactagcg atgctgtttg 3000

taaaatgaag attcgggact ggctcatatc ttttttatcta actagatgtc agatcttgaa 3060

atctgtattc tcgaagcaat tctgccactt gatcgtattc acaggggccc tggtaggctc 3120

ctttagaagg accatttctg ttcctagagc ttaactagaa ttcattcttc actgaaaaaa 3180

aaaaaagtta cttaagaaag catttctttc ctaatctcac tcaaatctgc agaattattt 3240

gtaattagta atacaaaatc tggccaaaag gagacttgta aatagcgtaa agtggtgtct 3300

tatgctaaac ggtggaatgt ataggcagag aagctctttg aagttgtcag atgagctggg 3360

ctcacaagcc tgattcaaac aggctgtcgg tctcctctca ccccttaata ctgtgcagcc 3420

caaactccta ggactcttga acatctgagc agttttgtgc tttgagccac tttttgacaa 3480

aaatggctcc attttccac agcgtggttt tcttaaaata gtttaatgtt ttatagtctc 3540

atagtagtag tgttgctttc taagctataa cagtcgacct tattcttcta ctctgaaaaa 3600

tcttgacttg tttgagtgta tataatatat ataaagggag ccttaatgga ttggttttca 3660

taatttaata tttttttgtat ttgctcttgt ataattgttt ttaacggaaa gtattaaaga 3720

attgagggtg gaattcttag aaccaaagtt attcttaata aaaatcacca catgcttgga 3780

ccatg 3785

<210> 767

<211> 1960

<212> DNA

<213> Homo sapiens

<400> 767

gactgtgtct ccaaaaaaaa aaaaaaaaag aaatggagc tgcctaaatt ctgtccctgg 60

ctacttgtta attgttgata ggatggaatg cttatggata cagttctggg tatgtccctc 120

```
agatgtcttt cctgtttttga gggaaacaaa ctccttgaga gaaagaaaaa atttggtgag   180

gccatccttt tgggagatca agatgaacaa caaaacttgt ataaagagag tgattcccta   240

cctcagcaaa agtaatatta gcatatttag gagtggcagg gtcaacataa gtggacaaag   300

aaaaagcaag aacaatatca aggcagccat gtcaatcatt ctacagtgct ttgccagcct   360

ccacagaatt ttaagcaaaa ttttatgcaa aaataatgtg tacctagcag agctttcagt   420

gtattttcac caaccttacc ttttttttctg tggagaaaga agatgatcta gcttgttcag   480

taaatattat tttcacaaaa tagaaaataa atattaaaac acttagaaga tttataaaaa   540

ttctatcagg catgcagggc atgtgattat cttttttattc atgcgattgc ttagtggatt   600

aagaaaagaa agttgaagcc aaattccttt tacagggcca gcgtgggggt gagtggtgag   660

tggtgggatg ggaactggta gaaagtgttt taaaatagaa ggaatctgac tatctgttta   720

gacagcataa tgctactgat tcagctaaaa tataatgatt gtttatagaa attataaaaa   780

tccttgataa gatcacattg acagatgaag ataactactt ttgaagatta gttttgtact   840

cagctccact gttttttctc actgttagga gcctaagtac cctatcagtc tgtgattaga   900

ttttgatgcc agattaggag aacgtgtata atcttgcata aaactcaatt attgctgtta   960

aataactact gtcaaatctt aataaagccc tctcactaca gggagataag atattttatt  1020

ctttcccttg tcctactggg aggtgtaaat atgtaattaa atttgatgtc attaatcact  1080

ttcaagttgt ttgcttcaga ctttcaaata taaaccattc taaatcccaa tttgattaaa  1140

gatcatggac aactcaagtt cactaggatt ctgggggtag gttaggttat gatttgtata  1200

attgacaaaa tatgtatttt aaggacattt attgtagtta tctaaaatct ttgtctgctg  1260

gttcttaaca tctgggttgt ctatggatgt gtttctgttt ctatcacctg ctccttcttt  1320

ggaccatggg tatgacttcc ctttacttta cacatgtatg gtagttttac attacttact  1380

ggacattgtg ggtgatagat tttaaagttt atctcccact aaagaatgtt gaattttgtc  1440

aagattggca gatcatcttg atcctatgga tgctaggttt taggacacgt tagggtgggc  1500

ctacttctgt tctgcccttа gtccgatgac acaaatctta gtcatgggat agggctctta  1560

ttcccaagat gtgacccttc taggggttca gtggaaagtg tgaggggcct accaagccct  1620

gaggtgttca ttaagcccct ctaaggcaga acttgtcctc ccagccccag gagccttctg  1680

ctcagtcttt tcagccgtcc agctcttact ttctcttggg tttctgaatc ttatcttgct  1740

catgcatagt caggaattat ttaaggattt gagcagagtt gtatgcatac tttgaagcta  1800

cccactctgt ggttctgtct tttccaggaa ttttttctcct catattctag ctgctgtgac  1860
```

agctccagat acctctgact cctcagtatc gcaggacttc cgttttctgc ttgcacactc 1920

ttcctcttct gctgcatgaa ctggggtgta ccttcacgat 1960

<210> 768

<211> 1628

<212> DNA

<213> Homo sapiens

<400> 768

agctctgaga gaggagcctt agccctggat tccaaggcct atccacttgg tgatcagcac 60

tgagcaccga ggattcacca tggaactggg gctccgctgg gttttccttg ttgctctttt 120

agaaggtgtc cactgtgagg tgcagttggt ggagtctggg ggaggcctgg tcaagccggg 180

ggggtccctg agactctcct gtgcagcctc tggattcagc ttcagttatt ataccatgaa 240

ctgggtccgc caggctccag ggaaggggct ggagtgggtc tcatccatca ctattagtag 300

tacttaccta tcttacgcag actcagtgaa gggccggttc accatctcca gagacaacgc 360

caagaatgtg ctgtatctgc acatgaacag cctgagagtc gaggacacgg ctgtctatta 420

ttgtacgagg gatagggtag tggctggttc ggatccaaac tttgactatt ggggcccggg 480

aaccctagtc accgtctcct cagcctccac caagggccca tcggtcttcc ccctggcacc 540

ctcctccaag agcacctctg ggggcacagc ggccctgggc tgcctggtca aggactactt 600

ccccgaaccg gtgacggtgt cgtggaactc aggcgccctg accagcggcg tgcacacctt 660

cccggctgtc ctacagtcct caggactcta ctccctcagc agcgtggtga ccgtgccctc 720

cagcagcttg ggcacccaga cctacatctg caacgtgaat cacaagccca gcaacaccaa 780

ggtggacaag aaagttgagc ccaaatcttg tgacaaaact cacacatgcc caccgtgccc 840

agcacctgaa ctcctggggg gaccgtcagt cttcctcttc cccccaaaac ccaaggacac 900

cctcatgatc tcccggaccc ctgaggtcac atgcgtggtg gtggacgtga gccacgaaga 960

ccctgaggtc aagttcaact ggtacgtgga cggcgtggag gtgcataatg ccaagacaaa 1020

gccgcgggag gagcagtaca acagcacgta ccgtgtggtc agcgtcctca ccgtcctgca 1080

ccaggactgg ctgaatggca aggagtacaa gtgcaaggtc tccaacaaag ccctcccagc 1140

ccccatcgag aaaaccatct ccaaagccaa agggcagccc cgagaaccac aggtgtacac   1200

cctgcccccca tcccgggatg agctgaccaa gaaccaggtc agcctgacct gcctggtcaa   1260

aggcttctat cccagcgaca tcgccgtgga gtgggagagc aatgggcagc cggagaacaa   1320

ctacaagacc acgcctcccg tgctggactc cgacggctcc ttcttcctct acagcaagct   1380

caccgtggac aagagcaggt ggcagcaggg gaacgtcttc tcatgctccg tgatgcatga   1440

ggctctgcac aaccactaca cgcagaagag cctctccctg tctccgggta aatgagtgcg   1500

acggccggca agcccccgct ccccgggctc tcgcggtcgc acgaggatgc ttggcacgta   1560

ccccgtgtac atacttcccg ggcgcccagc atggaaataa agcacccagc gctgccctgg   1620

gcccctgc   1628

<210> 769

<211> 1840

<212> DNA

<213> Homo sapiens

<400> 769

agttcatctc tcctttttggt ttcttaattt cattcactct tttcagagac cttttttctgt   60

catcttctct tttatcctcc catattttca acctgtttcc tattgattcc ttctccacag   120

gctagaaaat gtgctcagat acttttttacc tttaaaggaa aatgaaagtt tttcctggtc   180

tttgtgtccc tttctagctg ccactgtatt cctcttcctt tcactacgaa gctcctcaga   240

gcaatcatct tgtcgtctcc atttctactt tgttaccttc cgcttgctcc ctaaccctcg   300

gaactggcct cttacctacc tcctcattct cctgaaacag ctccagaaga ggtcaccaaa   360

gacatcctat gtgtttgttt cattcaagaa atacttttt tttttattga gatggagtct   420

cgcactgtca tccaggctag agtgcaatag cacgatctcg gctcactgca gcctccacct   480

cccagttcaa gtgattctcc tgcctcagcc tcccgagtag ctgggactac aggcacacac   540

caccacactc agctaatttt ttgtattttt acaaaaacaa aaaatacaat atgttgtcca   600

gactagtctc gaactcttca cctcatgatc tgcccacctt ggcctcccaa agtgctggga   660

gtcataagcc accgtgccca gcccttaaaa aatactttt gagcactaac agtatgccag   720

gaactattcc aggcacatgg gatagtgcag ggaggaaaac cagcagtccc tgtctttgtg   780

ggaatcacac cccagtgcag gaagacaaga agtaaaaaag caaaacccat gtatagtcga   840

acttgccaaa tcagacagac tctttgatcg gaatcttctt gcagactggg actttgtttc   900

tttttcacct tgtacccct agtctctggc atagtacctg gcacatagtg ggtattcagt   960

aaatagttat gtgaatgaat gaatttcata tgacccttct atagcatttg acaccactga   1020

cctctccctt cccttgatgt tgtgacactg ctctcgcctg gccctcccta tcagtctaat   1080

cactcactct tagcctccca tcctgcctgg ccttgtgatg acttcaccct ggccaagatg   1140

actcttgaac ctcatctgga caagctcccc agttctcagc actccagtca ccctgttttt   1200

gctgatgact cccatataga catctgccca gtgtcagctt catatcagca cttggacagc   1260

tttacagtgg tcccaaacag gctcctcctc ctggatccct gtcttggtaa atggcatcag   1320

ctgccagcag ccagccagtc accagcacaa cctgactcct ttcctttacc tgccacacac   1380

accaatcctg tcgttcctgt catcttagca gctctcttct ctccctcctc ctgcttcatg   1440

ctacagtgtc tgcactgtgg ccctctgctc tgcctggagt tcttgttaac tgtccatctg   1500

cctccaggct ggtaccactc agggtctctc tgcatcactg ctagggtgat tttttctttt   1560

tgagacggag tctcgctcta ttgcccaggc tggagtgcag tggcacgatc ttggctcact   1620

gcaacctcca cctcctggat tcaagcgatt ctcttgcctt gacctcccaa agtgctggga   1680

ttacaggcat gagccaccgt gcccggctgg gtgattttct aaactactct ggccatgtta   1740

ctctcttgga taaatagagt gaaacttgag taagttaagt aaaagtgtga acgacagtgg   1800

tgcctgtggg aaaggtgtcc ttagcacacc tccctggcct   1840

<210> 770

<211> 3102

<212> DNA

<213> Homo sapiens

<400> 770

cgatatgttg cccaggctgg tctcgaactc ctggactcaa gcgatccacc tgccttggcc   60

tcccaaagtg ttgggagtgc agacacgagc ccctgcatct ggtggacgtc tgactgaatc   120

```
ctgcctgtcc tgctccgtcc tgtcctgctc cgtccttaaa cacagtgagg cttaagggtg    180

aagaaagttg ctgaagcttg cctttggtcc aggactctga cttcagagta caggctctta    240

ggatgtgagc aggaggatgg caggcgggca cagaattcag aaagaatgag ggagaggctc    300

tggccctctg tgacccgaat caccgagccc ctctctcccc tcagctcaca agtacgtgcc    360

tcgagccatt ctggtggacc tggaacccgg aaccatggac agtgtccgct caggggcctt    420

tggacatctc ttcaggcctg acaatttcat ctttggtaag ttccccctgc tccaagctct    480

gatggcagac cccatcacag gcaagcccag gtcggtggac ggggacggct gtgagaaaca    540

aggaatggtc agctcctcac atgatcctga atggtgggaa ctcatctctc cattttacag    600

ctgggcattg gaggcccaga gaaagggttc tgtggggaga acagaaacca ctcatgcatt    660

tcaagtggaa tgaagtgtaa agcagacaga agcttacaga attgctagag agctggtgag    720

acagaacggg gcctccagag gactccgggg tccaggagca cgaggccttg ctgcggtcaa    780

gagatcagga cgttcccatg cctgtgtcct ggggttgggc cgtggatgcc acgttcccat    840

gtctgtgtcc tggggcgggg ccgtggatgc cacgttccca cgtctgtgtc ctggggcggg    900

gccgtggatg ccacgttccc acgtctgtgt cctggggcgg ggccgtggat gccacgttcc    960

cacgcctgtg tcctggggcg gggccgtgga tgccacgttc ccacgcctgt gtcctggggc   1020

ggggccgtgg atgccacgtt cccacgtctg tgtcctgggg cggggccgtg gatgccacgt   1080

tcccacgtct gtgtcctggg gcggggccgt ggatgccacg ttcccacgtc tgtgtcctgg   1140

ggcggggccg tggatgccac gttcccacgt ctgtgtcctg gggcggggcc gtggatgcca   1200

cgttcccacg tctgtgtcct ggggcggggc cgtggatgcc acgttcccac gcctgtgtcc   1260

tggggcgggg ccgtggatgc cacgttccca gcctgtgtc ctggggcggg gccgtggatg   1320

ccacgttccc acgcctgtgt cctggggcgg ggccgtggat gccacgttcc catgcctgtg   1380

tcctggggcg gggccgtgga tgccacgttc ccatgtctgt gtcctggggc ggggccgtgg   1440

acgcgccaca gaaacaggag ggcctcgctt cacttctgcc ttcccgaccg cagcacatcc   1500

agctggtaga tgccaactcg catccagccc ccagctgcca gggattctgg ggtggctgtt   1560

tgggctcctg gcactgccag tcggaaggaa ggtatgctgg agcaggaggg ctgatccatt   1620

cacccaggat cccctcagga ggcagagcct cgctctgctg tgaccccaag ttctcaagac   1680

cctgtccaga gccctcgtcc tgagcactca gcagcatcgg ctcagggaag ccacggcggg   1740

tcagagtggg gccggcaaca actgggccaa gggtcactac acggaggggg cggagctggt   1800

ggattcggtc ctggatgtgg tgcggaagga gtgtgaaaac tgcgactgcc tgcagggctt   1860
```

ccagctgacc cactcgctgg ggggcggcac gggctccggc atgggcacgt tgctcatcag　1920

caaggtgcgt gaggagtatc ccgaccgcat catgaacacc ttcagcgtcg tgccctcacc　1980

caaggtgtca gacacggtgg tggagcccta caacgccacg ctgtccatcc accagctggt　2040

ggagaacacg gatgagacct actgcatcga caacgaggcg ctctacgaca tctgcttccg　2100

caccctcaag ctggccacgc ccacctacgg ggacctcaac cacctggtat cggccaccat　2160

gagcggagtc accacctcct tgcgcttccc gggccagctc aacgctgacc tgcgcaagct　2220

ggccgtcaac atggtgccct tcccgcgcct gcacttcttc atgcccggct cgccccccct　2280

cacagcccgg ggcagccagc agtaccgggc cctgaccgtg cccgagctca cccagcagat　2340

gttcgatgcc aagaacatga tggccgcctg cgacccgcgc cacggccgct acctgacggt　2400

ggccaccgtg ttccggggcc gcatgtccat gaaggaggtg gacgagcaga tgctggccat　2460

ccagagcaag aacagcagct acttcgtgga gtggatcccc aacaacgtga aggtggccgt　2520

gtgtgacatc ccgccccgcg gcctcaagat gtcctccacc ttcatcggga acagcacggc　2580

catccaggag ctgttcaagc gcatctccga gcagttcacg gccatgttcc ggcgcaaggc　2640

cttcctgcac tggtacacgg gcgagggcat ggacgagatg gagttcaccg aggccgagag　2700

caacatgaac gacctggtgt ccgagtacca gcagtaccag gacgccacgg ccgaggaaga　2760

gggcgagatg tacgaagacg acgaggagga gtcggaggcc cagggcccca agtgaagctg　2820

ctcgcagctg gagtgagagg caggtggcgg ccggggccga agccagcagt gtctaaaccc　2880

ccggagccat ctcgctgccg acaccctgct ttcccctcgc cctagggctc ccttgccgcc　2940

ctcctgcagt atttatggcc tcgtcctccc cacctaggcc acgtgtgagc tgctcctgtc　3000

tctgtcttat tgcagctcca ggcctgacgt tttacggttt tgtttttttac tggtttgtgt　3060

ttatattttc ggggatactt aacaaatcta ttgctgtcag at　3102

<210> 771

<211> 1819

<212> DNA

<213> Homo sapiens

<400> 771

```
tttttttaaaa atcacaatgt tattcaaaca tagctccata acatattagt aaaggtcatg    60

aagtattttt aagtgatcca ttatgtcaca gtcgagctta tccaggaata caaggttgat   120

gtaacattgg aaaagcaata aatacaaata ccacatttat ttaatttaat ttatttattt   180

ttgacagagt cgcaccctgt cacccagcat ggagtgcagt ggtgcaatct tggctcaatg   240

caacctccac ctcccaggtt caagtgattc tcctgcttca gcctcccaag tagctgggat   300

tacaggtgca catcaccaca cccagctaat ttttgtattg ttagtagaga tggggtttca   360

ccatgttggc tgggctggtc tcgaactctt gacctcaaat gatctgccca cccccacctc   420

ccaaattgct gggattacag gcataagccc ccacacccag cctgaccaca tttgtttttag  480

aaaagcgtct ttccatgcat tcacttcttc aagttttttt tttgtttttgt ttttgttttt   540

tttttttgaga tggggtcttg ctatgttgcc taagctggtc tagaacccct gggctcaggc   600

caccctccca agtagctaaa actataggca tgcatcacca catcatttca ttgaagtatt   660

tattaggtac catcatgagc taggtgcagt tctaggtatt gagtttttatc agtaaataaa   720

catgatcatc acagaggatg tgatggaagc atttaataaa ttcaagagga attcagcctc   780

ataaactatg aaatattggg aaataattca tcatgtaaaa actggatata aagaaaaaac   840

ttttcctgca ggacattgtt gcaggaagtc agggacccca aacggggggga ctggctgaag   900

ccatggcaga aaaacatgga ttgtgaaggt ttcatggaca tttattagtt ccccaaatta   960

atactttat aatttcttat gcctgtcttt actgcaatct ctaaacataa attgtaaaga   1020

tttcatggac acttatcact tccccagtca ataccttgt gatttcctat gcctgtcttt   1080

actttaatct ctcaatcctg tcagctgagg aggatgtata ttacctcagg accctgtaat   1140

aattgcatta actgcacaaa ttatacagca tgtgtgtttg agcaatatga aatctgggca   1200

ccttgaaaaa agaacaggat aacagcaatg tttaggaaac aagagagata accttaaatt   1260

ctgaccgccg gtgagccagg tggaacaaag ccacatttct cttctttcac aagcaaatgg   1320

gagaaatatc actgaattct ttttctcagc aaggaacatc cttgagaaag agaatgcaca   1380

cctgggagtg ggtctctgaa ctggcccccc tgggtgtagc catctcttat ggtcgagact   1440

gcaggggtga aatagacccc agtctcccat agcactccca ggcttattag gaagaggaaa   1500

ttcccaccta ataaatttta gtcagaccag ttgatctcaa aaccgtctcc tgataagatg   1560

ttatcaatga caatggtgcc caaaacttca ttagcaattt taatttcacc ttggtcctgt   1620

gatctcgccc tgcctccact tgccttgtga tattctatta ccttgtaaag tacttgatgt   1680

ctgtgaccca cacctatttg cacactccct cccctttttga aaatccctaa taaaaacttg   1740
```

ctggttttttg cggcttgtgg ggcatcacgg aacctaccga catgtgatgt ctgccccgga   1800

cacccagctt taaaatttc   1819

<210> 772

<211> 1932

<212> DNA

<213> Homo sapiens

<400> 772

ctcctatcgg tggcgtcggt cgcaaaggga gcagcccccg aggccgccgc gcagctcccc   60

gccgaggcct cggtgcccct tcccattttc catccgcgct cccacgaagg ttgaggcggc   120

ggggagaggc gaagccgcga gcgctcggcc gggcggtccc gccgggtggt cgcagccatg   180

acagcggctc cccttccgcg cccctcccgc cggagatgag ggaagatgtc cctgtcaggg   240

ttaaggccaa gctgaagttg ctggcgtcta ccttccacaa gaaccaggag ccgcagccgc   300

ggctcacgct ccaccgcaac agacggtggg gcgcgcggcg gcggcctcgc agggcagggc   360

ggggggcgcag atggggggagt ctcgggaccg acggcggcct aacgggtaga ggccccgggt   420

ccccgcccct tcctccctca gctggccccg ccccgccccc gggactgcgc gaggcttggg   480

tgggaggagg cggagggcgc gtctctccgg ctcctggcgc ggggctgact cggggggccgc   540

tggcccctct tggccgccgt cgccacgcac cgaggtggga gcccgcggcg gccggagccc   600

tcttgggacc catggtcgcc ctcggtcagc gggactgctc ccgggacctc gacggggcgg   660

ggcggggcgc tccagcgttg tttgagccca ggcgcggaag ggaaaaggcc tctgagatgc   720

tcgcgtgttt tgcctgggcg cggtggcgca cgcctgtaat cccaaagtgc tgggattcca   780

ggcgtgagcc accgcgccgg gacccaaggc ccttaagttt taaggcctca ttcttcagtc   840

aggttttccc tgttcccgcg tgttcggcca attttttgtt gttgttgttt tgttttttgtt   900

tttgttttg agtcaatttt ccagacatct ttaattagca atatgtttaa gtagttacaa   960

gcctttcctt cttttcttgt gacagtttgg gttgaatttc tatcgtttgc agcctgtcac   1020

tgtaaggcac aaacatgatc acgcaagatg cgatagtaga tttaagccag ttgtttttaa   1080

gtttgtgttt aaggagaaac taacaatgaa aacggcctcg ttgacggagg aaaagttgga   1140

atgcagcctc tggtgctgtt tgagcgatcc ctctccccgg ggcctggccg cgcgctgctg   1200

tgttctggaa gggctcattg tacagtcaag gcggcagggc cttcttctgt cacccatgct   1260

ggagtgcagt agcatgatca cagctcacgg tagcctccac cttctgggct caatcctcct   1320

acctcagcct tccaagtagc tgggactaca ggtatgcaac caccatgtcc agctaaattt   1380

tgtacttttt gtagagatgg agtttcacca tgttggccag actggtctca aactcctgac   1440

ctcaagtgat ccacctgcct cggcttccca aagtgctggg gtcacaggcg tgagacacca   1500

tgcccagcct gcccttcctt tttaaacctt tcctgtgcat agtgaagaat accatgacta   1560

gtttggtgtt actgcctttg tttgtgctga agtaccagca tttttaccca ctattgtatt   1620

tgcaccgtta cagcaaatgt caccatgtta gtattcacgt taaaatagtt tggacctggg   1680

cgtctgaggg ccccactttg ggaaccgttg aaataggtac ttaaacctac tatatatcat   1740

atcttgtcat ctacaagatt tttaaaaaac atgatttcag ttaatttttt ttgtaatttt   1800

tacaatatgg ttttgagggg tttcagtcca gagcaacaac atgtatttta tttagcttat   1860

gctgaagttt actagataaa tactaaccta atagaatgag gtcctaaatc tttttttgca   1920

gtttctttag cc   1932

<210> 773

<211> 2096

<212> DNA

<213> Homo sapiens

<400> 773

cttgagctgg agtcacccag cctggccaag aactggaaaa gtctctttgg ggatttggac   60

ccatttctga aaagctcatg aaaaccactt tgccttggac tcctgccccc agccggagcc   120

ctccatatcc atttaaccca aatccccaac tccagggatg actacaggtt gggggagccc   180

cgagagcaag ggaggtgagg aaactgatgt ccagaaagaa gcaggcatca gtggagacac   240

tcctagccct gctgccctct cctcactgca cacacttcca ggttcagaca aaccggaaag   300

gaaacccacc atgcaggact gtccatgtga tggctcttcc cgtggctcca tttctaagcg   360

cctccgagga cctcatcgtg gcccaggacc gcaagccaag gccaccccag tgtccttacc   420

```
atcctgggaa tgggaggagt caggcccagc cttgtcctgt ctgcccccct ggaagccttc    480

cctgagcact ggcctcttat ttacccgtct ttgtctctgg cttgttggta tctgtccctt    540

gtctgattag ggaacgcctg aggtcaggat ctttgcctcc ccaatcagat tgtcaggcag    600

gagtgggggt agtgcagatg ctgggtcatt tctacatgtg agaccaaata gtggtcctgt    660

ttaagttgat ccccttgaaa gaaaattctg gaaaagctcc tcagatgcac agatacacag    720

aatcagacct tgggcaaagt gtgtagttgt gcttttgaag ctgtgcaacc ttggacaaac    780

tacttgactt ctctgtgcct cagtttcctt atttgtgaaa tgaggggtag tcatgatacc    840

ttccccatga ggttgatggg aggattgagt taatatttat aaagcatttc agacagtgcc    900

agagatatac cgtgtgttaa ataagtattt cttacacaca cacacacaca cacagacaca    960

cacacacaca cacacacaca cacacttcgg aggtctgcca ggccagggct catagccttg   1020

aatctaccca tggtagagag tcagacaact tgccttgcag actgcctgct ctcccagcag   1080

ccatgcaggg gatcttctgc ctctgcactg ccgattatcc cctgccctcg tcagagcctc   1140

tccccaaaag tacctccaag gccacaatta cccaggtctc tgcttcagtg ctgagtgtct   1200

gttcctctcc accatctcct gccacagtgc acacggacag ctccatcagg agaagcaggg   1260

cgaggcaagg cagcatggtg agcctgcact gtcctggaat ctctgggagc ccctctcagc   1320

ttgaagatgc ctcctgcagg ctttggtttg ctctttggct ccttgagtgt agatagggga   1380

aactcccect gtcttctggt ccttccagct gttcctgatt ccttccttca gcttaactga   1440

tccccaggcc agtttctgtg actcccctcc ctccctggct ggacaggcca atgatattag   1500

gagctgctca ggaggaggga tcagacctct tccactgctg ccccctaaca tttgatccca   1560

gggcttaaca ctctgatgca acacctgcct cacctttggc tgtttccctg gtggcaggtg   1620

cacagtgggg cagtgtgtgg gacctggagc ttgcagcttc caggctggaa aacctgaagg   1680

gaccttctca tcttagaaat aagggagggg gccatatgcc ttctccctac ctggtgctct   1740

gctcccctgt acagagaggc ctctccctgg aaattagcag tatccccttt ctgtctcctc   1800

ttcctgtctt tgagccccct cctctccagc attctcctcc atcaatagtc cctgtgtgtg   1860

caaaagaaca cgtcttcctt taagagaaat aacacattgc ttaaagaaat gaggctcctc   1920

acgagtggga attgggattt gccagaaaaa tggctgcagg tttcaagcgt cattggctct   1980

aagtgatctt tcccctgttg tcaaagtgat gtttctaagt ccctaaactg acttgtctct   2040

cctgcttaca acctttcagt gtcttcccac tgcccttgag tgaattcaag ctccct       2096
```

<210> 774

<211> 2315

<212> DNA

<213> Homo sapiens

<400> 774

taaaaaaata	cttctacctt	tattggcatt	gtgtgtggaa	aaagtggtct	atttaaggga	60
aatacaggct	agtaaaatat	ttgttatttg	cactaggaga	taatttaagg	aacaccttct	120
caaatgtcat	cagacttact	ttaaaggcaa	accaagtcca	aaagttctaa	attgagaaag	180
ctggaaggga	aacttaaata	tgatccaacc	ccctgtttta	tgaccagagg	ggaatggatt	240
ggccaagatg	tcggggatgg	ttaataggac	ctcaggctcc	tggtcagtgt	ggggcactca	300
gacccatgag	tctagaaagc	aaagaacaac	tggatccatg	tttcctatgt	cagagtccac	360
ccagttgcag	ttccacctga	gtccttcaca	gacattaaag	gtaggattca	catcatggaa	420
taagcatttt	tctactagcg	atttttttaa	taaagcttta	ttggaatata	atttgcatgc	480
cataacattt	cccctttttag	atggaaataa	tagacactgg	gaactccaaa	agagcaggga	540
ggagagggag	ggttgaaaaa	ttacctgttg	ggtataacat	tcgattgtaa	tcagtttcca	600
gtgttttgca	ttcctaccag	ccgtgtaatg	cactatgaac	attcatttgg	gggatgaata	660
ccctaggagc	ccaatccca	ccattacatg	tgtaataccc	atgtaataaa	caagcacatg	720
tacccaaat	aaaaaaaat	cccctttaa	agtgtgtcat	tcactggttt	tcagtgtatt	780
cacagagtta	tgcaaccatc	accacaaacc	aaatgtttaa	catttccatc	acccacttag	840
cccctcaaa	gaaatcctag	acctactagc	agccactccc	cattacccac	ttccaggctc	900
tggcaaccac	ccttcagctt	ccagtcttta	tagatttgca	tgtgctgggt	gttttcatag	960
aaaaggagtg	tgtgcccttt	tgaatctgat	ttctttcact	cagcagattc	atccatgctt	1020
cagttcatcc	acgttgtaac	atggattagt	acttcattcc	ttttcatagc	caagtaatat	1080
tccactttat	ggctatacta	cattttattg	atgtacattt	gagttgttta	ccctttttgg	1140
ctgttaggaa	taatgctctg	tgaacatttg	tttacagagt	ttttgtgtat	acgtatgttt	1200
tcagtttcct	taggtgtaca	cccagtagta	gaattgctag	gtcatatggg	aattctgtgt	1260
ttaacctttt	gaggagctgc	cagacggttt	tccaaagtgg	ctgcaccgtt	tgacattccc	1320

tccagccgtg tatgaggggtt cgctttctcc acgccctcgc taacacctgc gattttcttg 1380

ttatgtgagc cttctcgtga atgttattcc actgacatta atctcatggc accgtcagtg 1440

attgaaatga tcttcttgtt ctctgtcttc gcctctggat catgaccttc ccgaggactg 1500

aatgtgtcat aaaatcccca gtctctagca gtacatgtgt attgagttgg atcacatgct 1560

gctggaccca tggcttgtca tcatgtgtac atgtagccga ctttgactct caactgtgtc 1620

agttctgggc tagagactgt tactttatac aaagagagat aaactgtgtc ccttgtcctc 1680

aaataaatag gttggactac tagggtattt acaaaacaga gtgtaggtga agaaaaggaa 1740

atttcagtga caaattagga ggcacttaag aaatactgga cgttttcaat taatttggca 1800

aaatgaaaag taatagatac atttccttgg ttgtggctgt gatgggtaga gacagtggtg 1860

ctgaacctcg ctcacacatg tgaaagcttg tctgctccag aagtagaaga gagccttcca 1920

gttgctaagg ctctgtccag ggccgggctc ctgccaggtg gcaggcagag gcttcctcaa 1980

gccctgcgtc cctcttctgg gttcagagac cactcccagg cttggttcta tcagcacact 2040

ccatgcatac aggtgcagaa tgctctcccc ggccacccga gaccacacct cagccaggac 2100

cttgtgcaga gcttgcttgg gccaaggtac acgatccagg aaagctgagc tcaagaaaaa 2160

tgaatccaat gctggatgtg gtgactcgtg cctataatcc cagctaatta ggaggctgag 2220

gtgggaggat tgcctgagcc caagagttcg aggctgtgtt gagccatgat tgcaccaccg 2280

cactccagct tgggtgacaa agggccatgt ttctt 2315

<210> 775

<211> 2946

<212> DNA

<213> Homo sapiens

<400> 775

tttttttttt attttttatt tttatttttt tttgagagaa ggtttccctc tgttgcccag 60

gctggaatgc agtggtatga tctgggctca ctgcaacctc cgcctcccag gttcaagcag 120

ttctcctgcc tcagcctccc aagtagctgg gactgcaggc atctgccacc acacccagct 180

aattttgta tttttattag agacagggtt tcaccatagt gaccaggctg gtctccaact 240

cctgaccttg atccgcccgc ctcggcctcc ccaagtgtgg ggattacagg cgtgagcagc　300

gttgggatta caccatgccc agcgacagat tatacttttg cagggagcct gggtgtgcag　360

cggctgaggc cagaaaggcg aagcctgagg gacctggggc tcggagcaga gctcagagac　420

tcctctctgg tgagggcctc tgcaggggct caggcatcct ggattccctt aaatgcctaa　480

tctttatatt gtgtctcatt gtctgcctgg caaactctta tgtatttttg aaatcatggc　540

tcagacatcc ctactcaggg gatgtggtca ccccgtcctc aggcctgcct cttgccctct　600

tgccattgat ggctgcctgt gacccgcatg ctggctgtag tggctgtctg tttctctatc　660

tcagagggag gggccatcct ggggccaggc ctggggactg ctgaccaaat gttgcttgga　720

tagaacaagg tgaccgtggg agaccagagc ttgtctccac cacgcatctg cccactcagg　780

cttgtaagtc tgagctgggt gctcacatgg ggcctcattt ttgaggaggg cttggtgaga　840

ggtctgggtg cacccagagc tcagtgtttc ttatgcatcc tgtctgccca tttgagtcat　900

ctcagtagct tctaaaaatc caaatgctca ggcccacccc agaatctgtg tgtatgcaga　960

ggacagcatc agtattttac taaaatccct aagagcttcc caagaagaac catggttgag　1020

aaccactagt ctggtgcccc ctggcccagg gtgcatgaat accactcagt ctaagacact　1080

tgaaagctcc atgtcttaga taatcaggat ggagattatg ggccactcta atctggttgt　1140

gtttctgagc ccctgaattg gacatttatc cagaacctgt tagaagtggt cactgaactc　1200

cagtgtgcag agatgcagat aaactgcaaa gtccctgcca gcctgaggtc ctgtgggtcc　1260

cttgatcctt gtgacctctc ttcaatccct agttagtgat ggagcacacc ctctgtgtgt　1320

caggcttgga tctcggggat gggcagcaaa gcagacccag ccgatgttct catggagcac　1380

atgctttggc aaggggggaca gatgcagtct cacatgcaca caagcggcat gagtgccctg　1440

agaagggttt tgagctgggt ttagagtggg aactgcatgg cgggctggca tagaggctgc　1500

agagtggggg ctgggccttc ccagcaagtg ccccacatac agtatgtcag gggagccagt　1560

ttgttcgaga tgtgatgctg ccctcagctt gacccagtgg ctaggaggtg accaccaaca　1620

ctcagacccc ctttgctgtg ttgttcacct cagaagctca acccttgct ctggcacgca　1680

cagtggctgc ctctggtgcc cacctcatag tcccagttaa cacagcccag ggaatagaga　1740

gagtggattt ctctgtagct ccagtaccat ttctgggatt tagggatggg ggactggagt　1800

tggggacacc ttgcagattg actttaacca gtgagaaccc ttttctgttg ccagggcagg　1860

atctgtccct tttgagactg actggaagtg ggtgagggga gaattcttcc aaggagaacc　1920

agggcatcct tgcaggagaa agcaggagtg ggggatagaa gtaaccgggg catgtcccct　1980

gacagaggca agtgggaagg gatagtagct ggggagtgag atattgtgca ggggagatga 2040

tgcatggtca gggctgcagg gaaagcgagg ctccagtctt gttatccagg cacagctggg 2100

ctgctgagca tgggcagtga ggaaggcatg ttgactcccc caggctccac aggggggccag 2160

aatcagcctg gcacttggcc ccaggtctcc cgtgtcctct gtgttgtgtc accgcagtcc 2220

tgaagtcaca ccacagctct tcggcttgca gtcagctctc tccctgattt gtcatttcca 2280

ccatgccact tacgtccagc tgggacagag agctgaggac ccacaaggtg tcctgttgca 2340

ggggggttaga gtgagggctt gtctctacag tgtgattcca gcaggggggca gattttttgtt 2400

tactgatagc cccttcccca tgtcgagcag aggtggacct ggcaagggca gcttcagtcc 2460

tgggggagga cgatctgcac gagacactgg aagacgagga gtgaagtgtc agaaggagct 2520

tctggatgga aacagttatt tctggagcct ctagaaggtt gtgggttctg gggcagtagc 2580

aggagaagcc ctgagtccaa acaggagtgg acaggccatg agaaaacgaa aggcacaagt 2640

atccatggga tgttgggaac aaagcttgca gattgacatc tgctttggcc tggccaggcc 2700

cccatcgccg gggcaagctt gggaaggagt gaaggcagca ctctcctcct ctccctccta 2760

gtgctgctac agctagccag tagctgatcc cggccaaaag tgaaaaaggc caccaagata 2820

gtggctggtg ggccaggtgc agtgtctcct tgcgcctggc caataatata tttttacgta 2880

agaatctgtg ggacaactga aacctgtgag accagcctgg gcaacatagg gagaccccat 2940

ctttac 2946

<210> 776

<211> 2962

<212> DNA

<213> Homo sapiens

<400> 776

aagttaacgg gaccaaagta ggaaagcaga tagtggaaaa cttctctccc aatcagacca 60

agttcacggt gcaaagaacg gaccccgtgt cacgctaccg ctttaccctc agcgccagga 120

cgcaggtggg ctctggggaa gccgtcacag aggagtcacc agcacccccg aatgaagcta 180

ctccaaccgc agctcctccc acattgcccc cgactaccgt gggtgcgacg ggcgctgtga 240

gcagtaccga tgctactgcc attgctgcca ccaccgaagc cacaacagtc cccatcatcc　300

caactgtcgc acctaccacc atcgccacca ccaccaccgt cgccacaact actacaacca　360

ctgctgccgc caccaccacc acggagagtc ctcccaccac cacctccggg actaagatac　420

acgaatccgc ccctgatgag cagtccatat ggaacgtcac ggtgctcccc aacagtaaat　480

gggccaacat cacctggaag cacaatttcg ggcccggaac tgactttgtg gttgagtaca　540

tcgacagcaa ccatacgaaa aaaactgtcc cagttaaggc ccaggctcag cctatacagc　600

tgacagacct ctatcccggg atgacataca cgttgcgggt ttattcccgg gacaacgagg　660

gcatcagcag taccgtcatc acctttatga ccagtacagc ttacaccaac aaccaagcgg　720

acatcgccac ccagggctgg ttcattgggc ttatgtgcgc catcgccctc ctggtgctga　780

tcctgctcat cgtctgtttc atcaagagga gtcgcggcgg caagtaccca gtacgagaaa　840

agaaggatgt tccccttggc cctgaagacc ccaaggaaga ggatggctca tttgactata　900

gtgatgagga caacaagccc ctgcagggca gtcagacatc tctggacggc accatcaagc　960

agcaggagag tgacgacagc ctggtggact atggcgaggg tggcgagggt cagttcaatg　1020

aagacggctc cttcatcggc cagtacacgg tcaaaaagga caaggaggaa acagagggca　1080

acgaaagctc agaggccacg tcacctgtca atgctatcta ctctctggcc taacggagcc　1140

cacccaggca cagccaccac tttgcaagtg ggaggagggg agaaggggag acaaaaccac　1200

tgcagaccta ccacgaagcc accaccacct tcagtaacaa gggtacgata tgggggtctg　1260

ccaagctgtg aggaccagta gccaccaagc cacccacaag ccccctccca atgacccccc　1320

ttcagccccg ggtgccacca gtgtgggaga ctggagccg tggctgagct cagctggagg　1380

gagcctggcc ccttgcccgg tctcgcagcc accccgagcg ttccaccaca ctgtccgccc　1440

ttggcctcgg cacacgctca cctttctgt tggttacggg acttctcatt gtcttaattt　1500

cgctttgtgc atcttcccct ccagacccaa tgtctctgtt ttcttttcct tttgaaaaag　1560

agtccctgga aaagaaagaa taagtggatt ctcccccagg agaatccttt ttgcaaagat　1620

aggcaaaaag gattgaatcc ataccagaac acgtagacag gctgtaatat tcaaaccacc　1680

tctgggccaa tgcatttcca aaggatgcct ttctcgccat atgcctcccc tggcccccag　1740

cccctctgcc tcggccttgt cagttgctga gctgggcttg gctcctttct ggaaaatgac　1800

agtatttttg gcagggagaa ggtgcgcagg cctccttgct gctctctggt ttggttggga　1860

ggtgtgttta cctcttgctc ctcattcctc ccctgccctt ttctctggaa tatctaagat　1920

gtgagctgca ttgactctga agacgtttga ggaacaggag tgggcactga tagaaaggac　1980

ttcaacgcca gtgactgtgt acctccagca gaagaaaatc aggtgtctgg tcttgggggc 2040

actgtgctca cctctagaga gaagaaaaag gctgggtttg gacttcatgc ctcctcactg 2100

gtgaaaccca ggatgtagat agagggccac acccaccctg tccagagtag agggcacctg 2160

tccacgtggc cagggcccat gctgccaccc tcgaggagat ggaaccctgt gatgcaaaag 2220

ctttgctggt gtgtttgggg cataaggcac tgctcccctt ccatctctag cagatatcat 2280

cttctcagcc aattctgtag gacactgagg ctcttgtttg acatggtgtg tggatgggga 2340

cttgccccaa gactgagcag gtctgccctt tcattggggt gtatacatat caggggaccc 2400

tgaggtggca ccgtactcag tgttgtgatg cccccaccta gggaggactc aatgctcttt 2460

gtatgcctta tgcagcgctg atctgtccct ggagttccca ggttcccagc tcccccctg 2520

caagccttga agcctccagc aacgtctatc tccaggagag cagggcagcc tatgcaagtg 2580

ttccggcagg accagaagtg gccactcaac acacgtcctc accagtcacc ccaaatggag 2640

acactcgcag acctgcagtt ctcagaccga aggtgctgcc ttcatcctcc ccacctaatg 2700

cattttgaa accaaaggta cctagcctca gagacagaga aggagagggg gagatcttga 2760

gtctaagagg aacccttta g ctgtttctgc agctgaggtc agtttcagga gggtgaagct 2820

gatccccagg aatggatcag ctgccatggg cacagcctcc gatttgagcc tctccggctg 2880

ccagccaggg ggcctgggcc agaccagggc tctgtccttc cgtgacttta ttaaagcaac 2940

atttgccaca tgtttaagcc gc 2962

<210> 777

<211> 3039

<212> DNA

<213> Homo sapiens

<400> 777

acatcctgga agagtggcct aggacagctc ctctcctgcc agagctaggc aggcgccgaa 60

gtagccgcat ggccccgtca gaagacccca gggactggag agccaacctc aaaggcacca 120

tccgtgagac aggcctggag accagctccg gtgggaagct ggctggccat cagaagaccg 180

tccccacggc tcacctgact tttgttattg actgcaccca cgggaagcag ctctccctgg 240

cagcaaccgc atcaccaccc caagccccca gtcccaatcg agggcttgtc accccaccaa   300

tgaagaccta catcgtgttc tgtggggaaa actggcccca tctgactcgg gtgacccca   360

tgggtggggg atgccttgcc caggccaggg ccaccctgcc gctctgcaga gggtctgtgg   420

cctcagcttc cttcccagtc agcccgctct gcccccagga ggttcccgag gctaaggga   480

aacccgtgaa ggctgcgcct gtgaggtctt caacttgggg aacagtcaag gactcactga   540

aagccctctc ctcttgtgtc tgtgggcagg ccgattagct ggaagggccg ggctctgatg   600

cccagaggct gcaattccca gggcctggcc ctgcttcccc agctaagcag gagtcttttg   660

tgcttgagcc aaggaaacat cattagatcc gctaaggggc atctgaaaca tccgtcgagt   720

ggcagaggca ggataagtca cctgcacatg aagagactca ttcattcata cagcaaatat   780

tactggtaca tcttccacat gccaggccct gcaaagtgct ggggagatac catggttttc   840

ctggagctgg tatttttggg gtggagggaa cccaccctga ataaataaag taacccaata   900

aataaagaag atgattttga acagcgatga atgctctgca ggaactgaaa caggatgcta   960

gagggagagt gattggggtg aagacctttc ctgatgcagt gcttggtaag ggcctctctg   1020

cgcaggcaac aaagtgtgat ctaaaagatg agaaggggcc agccctgaga aaatccaccc   1080

tccccagggc cacctgctgt catcttaccc cagggcaggc cagagcagtg gtcagaatgc   1140

cccagcatga cggggagggg caacgggttt cttgctgcca tcttggctca gaggcgagtg   1200

tgtaggtcac tgcaaaggca ggggatacca cgtggggaga ctcgagggcc atgccagttg   1260

gggctgggag gctcagggaa gttggctcca ggagactcca tcccagaagg cagcccaggt   1320

gggacctggg gatctgagat gggaaataag gggatctggc ttctcaaaag ggagggaggt   1380

actcaaaaat agagtatcat gtttgaacga atgaaaacaa gacatgttat ttattgagca   1440

tctactgcat accaggctca tgctgccctc tagggatagc aaaaaaaaaa aaaaaaggtg   1500

gggggaggag gttcacccct cagggcaatc gtgttccctg agcaggaggt ggagttactg   1560

gtgtgggtgt gaaggtgtct gtgagtctaa ggcatgcaca gcactgtgag aaaccctaaa   1620

gcaacctatt taaggaagtc agtctcaaag ctcccagata aaaatcactg ggttttctg   1680

tatttatttt ggagacagag tctcactctg tcacccaggc tggagtgcag tggaacaatc   1740

acggctcact gcagcctcaa actcctgggc tcaagtgatc ctcctgcctc ggcctcccga   1800

gtagctggga ctgtaggtgc accactacgc ccagcttgac ttctttggt agagaagagg   1860

tctcgctgtg ctgcccaggc tggtcttgaa ctcctggcct caagctatcc tcccgcttca   1920

gcttccctaa gtgcttggat tataggtgtg agccaccgta tctggtcatt aatttattca   1980

atgactattt tactaggttc ctacaaatac tagctgctaa catttaacat gtaattgacc 2040

atttactctg tgtcagagaa acaacatggg cactgtattt gtgaccattt tatagattag 2100

agagctgagg cacagagagg ttgaagaatg gactcaaagt tccatagact ggtaccattg 2160

agattagaac tcaggcaagt ctggtgccca tattcttgct tgtaactgta aggtatatac 2220

cctctcatcc tggtagcgtc tcttctaggc agaggggaca cacagaggat aaatgtaacc 2280

ctgtcctcaa ggagctcaca gccaggtggg ggaggccaga aagaaagcac acaattgcca 2340

tagcttctga gaagtgcaac agtaagggca acacagaatg atgctggagg acaaccagcc 2400

cactctagag agaggagatc agggaggact tcctgcagga agtgatgccg aaaatgagat 2460

ctgaccggtg actaagctat acaaaagggt ggggtggggg agcaagtggg gagtgctctg 2520

ggcagaagga ccagtcgttc agtctggcta gggtaattgt cattcattca tttattcacc 2580

aagtatttat tgggcatcca ctgaatgcca ggctttgggc taaaccatga gatggagcaa 2640

tgaataagac aatgaggccc agccacaaaa tagtttatcc tctagttggg ggagacaggc 2700

aatgcacaca cacaaaacaa acagatcaga aaggtggcag gaggccaggc gcggtggctc 2760

atgcctgtag tcccagcact ttgggaggcc aaggaggggg aggcggggggg agatcacctg 2820

aggtcagggg ttcgagacca gcctggccag cttggcggag gcccgtctct actagaaata 2880

caaaaattag ctgggcgtgg tggtgggcac ctgtggtccc agctgcttgg gaggctgagg 2940

tgagagaatt gcttgggcct aggaggcaga ggttgcagtg agccgagatc tcgccactgc 3000

actccggcct gggtgacaga gcaagagcaa gactgtctc 3039

<210> 778

<211> 3593

<212> DNA

<213> Homo sapiens

<400> 778

cttggacgtc tagatcaggg cttaggttca gaattgtgta ggcagggtcc tgggagggca 60

gcattagggt agaggaggtg gggtcaggaa caaaggatct tcctgatgga gatgtcccta 120

gggagcccat ggggtcaaga acagaacttt gaagtgtcag ggactaaggg atgtttccat 180

```
ataacacatg ggtctggaaa tgtttctgtc cagaccagtg tttcacagcc ttggcactgt  240

gacatttggg gccagatagt tttttgttgg gaggtgggag gggctgctat tctatgtatt  300

ataggatgtt gtgcagcaac cctgggctct atttaccagg ccagtagcac accgcgcctc  360

cctctgggtt gtgacaagcg aaaaaaaaat gtctccagac actgtcagat gtcccctgca  420

ggggcaaaat cactctgatt gagaggaccg tgatgcaagc gcatggacag accgaaggca  480

tgatgacagg gagaagagta agggagctgg ggaaggcggg gcacggagag atgataaaag  540

gatagtgttc tgagatgaga agaaacggcc tgcagcccgg gtaagctccg agatgcattc  600

attcattcag ccagtgagtg cctaccatgg attgggcact gtgctagtct ctcaacaaaa  660

caggcaaggt ttttactcag ctggaacttg catttagtag gagagacaaa aataaagtct  720

ataataggtg ctgataggta ctttgaaaag taaagcaggg taaagggatt acagggtgtt  780

tggcaggtgt tcttttttgga gtcaacatcc aggtctccca tgggcatttt ggtcaactcc  840

agagccagga aggaccacca gcagtgaccc tttggtatca cttgattggg gaatctaaga  900

gtttgacttt gatcttaacc aaagactttt ctcttcactg aggtctggac ttcaacagaa  960

agaggtcaga tctctagccc tgtccttgag actctgagac tcgaacgtta ttctaaacga 1020

tgccttcaat gttactctca ccttggaatg ctttatttaa aaaaagaaaa aaaagggcgg 1080

gtcagactca atccccagag attctgattt aattggtctg gcatagtgaa ctgccatcag 1140

ctgtgactat ttattagaaa gctcccaaga gactaatgta cgcacagggt taagagctac 1200

agctctgagt gcctgcagct caggctcctt tggggcctct gggaatgaga taaattgatt 1260

tggaggagtc aggggggagga tgcaagtgac ctctgcttgg ctatcttatc aaaaacagtc 1320

ctcacagctg cacttccctg cagtaggggt attcctagcc ccatcctgca agtgaggtaa 1380

cctaatgtgt tcccgggcaa agtggggaaa tggcaggcta gacatgcata tgcatagcct 1440

gtgttcttcc tgtgacagct gtgctgacgt ctttggagaa attgcctacg tatgtccctg 1500

gcctctgggg ctggcaggtt caggccagga gtgatttttg aatatttgac agctggtaca 1560

gcaaaagctg actggcccaa aggaggcaat gaggctgtgg cagtgcattt aatggctggt 1620

tttcagtata tcaggaccct cccccaattc aatacccagc acagccccca aggctcaaag 1680

gggtgccagg gcaggagggg aaggcccctc agttatttgc ctcagaaggg aggcacaacc 1740

acggttcagt aactctttga agcatgttcc catccaggtt ccagccgtcc tcacctcagg 1800

aggacatagc tttgtgcctt tcaaagccct ttctcatcta tcatcaggga ctcggaagac 1860

gagccaggtt tacagccctg ccttgatgtg tgccgagttc cttgaagaaa attattttat 1920
```

ggacaatgta tgagtctgtt ttcgtgctgc tgataaagac atacccagac tcacagttct 1980

acgtggctgg ggaggcctca caatcgtgat ggaaggtgaa agacacgtct tacatggcca 2040

cagggagaat gagagtccct gtacagaacc atcagatcac atgagactta ctcactgcca 2100

tgagaacagc atgggggaaa ccgcccccat gattcagtta tctcccaccg ggtccctccc 2160

acaacacgtg gaaattatgg gagctataat tcaagatgag atttgagtgg ggacacagcc 2220

agaccatatc agacaagaat catcttctca aatttggggt gcgtggctga gtgcacacac 2280

ctgtgaaaac tgcgggatga atgcattaca acttcctgga acaagtcatt ttacctaagt 2340

aattggaagg ggaaagccaa ctgatctgct tatctgtcct gaaaggcaga gctacgaagc 2400

catggcagca ggtgctcctt catcttcaag gccagcagca tagcttccat cttgcaattt 2460

cttttctgt ctgactctga tcctcctgcc tccgttttat aaagaggacc tttgtaatta 2520

tgttgagccc acttgggcaa tccaggattg tgctattgag aaataactat ttagccttta 2580

gcctgtttcc tggcataaaa ctcctgaaat cttacaattt ctaaagtgat gtctgtgaac 2640

ccaaaatatc ggagacaagt ctcagtcaat ttagaaagtt tattttgcca aggctaagga 2700

cacacctgtg acacagcctc aggaggtcct gacatgtgcc caaggtggtc ggggcacagc 2760

taggtttat atgttttgg gagacatgag acatcagcca gtatgtgtga gatgtacgtt 2820

ggtttggtcc agaaaggtgg gacaactcga agcaagggcc ctgcctttca ggtcataggt 2880

agataagaga caaacagttg cattccttca agtctctgat gagcctttca ctgaacacac 2940

agtttacatg tgacaggagg gtagaggagt agtcacttat gccttggtct ggcttagtga 3000

aatagggcaa agggagcaat caggtatgca tttatctcat gagttctgtg tgtcctctgt 3060

ccaaaaagaa ttttcttttg ggcatattgt gagggaggta cgtggttagt aataaaatgg 3120

gaaacaggtt tgcctgaagc agttcccgaa gtgctgggat tacaggtgtg aggcaccatg 3180

ccctttctt ttacatgtct tttgtatgct aatgagatgg ctggtggctg gcagcccctg 3240

ggtagcttca ggatagggtt ggtcaccagg aagaccaagg caggactaga cagttgggac 3300

attgagctcc acccttcaac ctctggggag gggagaaaga ctaaaggtta agttgatcac 3360

caagggccag tagtttaatc ttgcctgtgt aatgaagcca ccataaaaac tcagaaggac 3420

agggtttgaa gagcttctgg atagctgaac acatggaggt tcctggaggg ttcccaagga 3480

aggcatggaa gctccacacc acctcacaca taccttgtat ttctacacat ttctttctct 3540

gtattcttcg gaatagcctt cataatcaac cagtaaatgt cagtatttgc ctg 3593

<210> 779

<211> 2898

<212> DNA

<213> Homo sapiens

<400> 779

aaaaaaaaaa acgtttactg agcgccttca acttgccagg cactaattag actagcgcag   60

agaaacgggg ataagtactg atgagggtcc cagccctcag cgatcggatt tcagaggggg   120

agataaagga ctgcccagaa gggtggtgag tggagtagtt gatataaaca acgaggtgcg   180

atgaaataca caggagggct gctaatcaca tatggggtgg gtgccgaggg cccttaatta   240

agggaggctt cctggacggg tgacacccaa gcggagtcct gacgacccgc gtcagaagta   300

gtcaggcgag gaggagggta aaggaatcca cgtcccaagc agagaagcag ctttccctac   360

acagcacagg acacggtccg cgcacagaag ccgcaggaga cgcaggcaca ggggctgggg   420

agaatccttg ctgggccctc gccgtccatg cgccgcctcc ctctgcccgg tgtctggtgt   480

cagcctcctg cctggcagag gaactccagc ccctgctccc cgaagctcct ccaggccttc   540

tgcttccctg actcggaatg ggcccgctgt ccagtgggta caaggctggt ctccccgccc   600

actggtgacg acgtaaagat ccagctcagc ctggtttccc ctggtgatga tatcttgcga   660

ctcgtctttc tccaggaaaa cagggaccgc tctccgccta cagatggagt ctcgctctgt   720

cgcccaggct ggagtgtagt ggcgcaatct tggctcactg caacctcgga ctcccgggtt   780

caagagattc tcctgcatca gcctcccaag tagctgggac tacaggcacg tgccaccacg   840

cccggctaat ttttgtgttt ttaatagaga cggggtttct ccgtgttatc cagaatggtc   900

tcgatctcct gacctcgtga tccacctgcc tcggcctcct aaagtgctgg gattgcaggc   960

gtgagtcacc gcgcccggca cgcccggcta atttttttgt atttttagta gagatggggt   1020

ttcaccgtgt tccccaggct ggtctcgagc tcctgagtcg agacgggatt tctccgtgtt   1080

tgccagaatg gtcttgatct cctgaccttg tgatccaccc gcctcggcct cccaaagtgt   1140

tgggattgct ggcgtgagcc actgcgcccg gcagattttt cttttaaaac gtggagaata   1200

agaaatcagc ccgagtgtgt aatggcgtca atattggtgt ggacaagaca aagtgaatga   1260

ggcaaggagc gaggctgggg ctctcaccgc gtcttgaatg tagatgagag tgggacggtg   1320

atggcaggga ggaaggcgac gacatctctt ctcgtccttt tggctaagat caagtgtagt 1380

atctgttctt atcagtttaa tatctgatac gtcctctatc agagaacaat tatattagat 1440

agatttttgg agcagggaga tgaaatagga gcttgctctg tccactccac gcgtcgacct 1500

ggtattgcag tacctccagg aatggggctc cctctcctgg gatacaacct gtttgcaagg 1560

ttagaaagaa aagactgcgc cgggtagttt aggatagttg gtaggttttc ttactccttt 1620

aagtatcata aggttcatga tttatggaga gtatcctagg acccaaaaca agaatattca 1680

tttccaagta gggaacatgt tcgactttac ttggagggct ttaaatctca gcttggctgt 1740

ggaggggtga tgacctttca aagggatgga ttccagtggt gtgttgccca ggctggactt 1800

caacttactc tgtttgtttg tttgtttttt gtttttgaga tggagtttag ctcttggtac 1860

ccaggctgga gtgcaacggc gccatctcgg ctcactgcaa cctctgcctc ccgagttcag 1920

gcaatgctcc tgcctcagcc tcccgagtat ctgggattac aggcacccgc caccatgccc 1980

agctaatttt tgtatttta gtagaaacgg ggtttcacca tgttggccag gctggtctcg 2040

aactcctgac ctcaggtgat ccacctgcct gggcctccca gattgctggg attacaggtg 2100

tgagccacta cgcccagctg aacttcctct tcagcccatg gagtagttct actttaaggc 2160

aggcaccaat gtactggcta caaacttcct tttttcccca ggaaaaatcg aggcacaggt 2220

agtttaagtt accgaggaat gcacaggagc agaactcgag tccaagcatc gtggctccac 2280

ccttcatgct tgatgctttt ttaggctctg ttctaggtat gtgtatcctt tacgggatca 2340

gccaccggca gttgccttgc aaccatgatg acaaatctct cccagctttt ttgggtctca 2400

tccctgtatc tataaattgc atcccagcat aaagatcaga atgtgtcttt tgctgaccca 2460

atctctcacc ctttccaaac tccagaaatc ttgtctggcc ttggcaaaac tacccgctgc 2520

ttctttctct aaaggatatc ttcagtccgg gcactgtggc tcatgcctgt ggtcccagca 2580

ctttgggagg cccaggtggg gggatggctt gagcccggga ggccacagtg aggtgagatc 2640

acgccattac actccagcct aggcggcaaa gccagagccc catctcgaaa caaacgaacg 2700

aacaaacaaa gcacaaaaga aacagcctag gcaaggtagt gaagccctgt tcagggtgac 2760

gaatatctgt acaacagcta tttcagaggc tgaggcagga ggatcagttg agtctgggag 2820

gtggatgctc cagtgagccg tgattgcacc actgcactcc agccttggtg acagagccag 2880

accctgtctc aaataaat 2898

<210> 780

<211> 3856

<212> DNA

<213> Homo sapiens

<400> 780

gttactgtac tctcagcagg atgttctttt gccttgccca tcgttcagtt taatcctcta   60

gaaagaaaat ttttagaggt acatcggact aaatcatttt cttctgagta caccatttcc   120

aaatggccgc ccagggtcct aaatccggcg gctgcggaga gggactagag ggtgtcctcc   180

tctgcagagc cgtaggactc gagcgccttc atcactggac gctggagcca ggaaggaaac   240

ccacacactc agggacaggt ataaccccac aggggtgcac cagtgaggcc ccgatcgcag   300

cggaggactc catccctgag cttggtgagg gcgtcctggg gaggaagcga acactttccc   360

cgttcaagtc agagagcagg actcactggg tggcaggtca gaagttgaat tttaacccga   420

cctgcgcttt gtccccgcgc cttccgcagc ctgggcgccg cggtggcacc gagctgggag   480

aggacacgag aggctggcgc gggagaagcc gagagttgct atcgaccggg agctgccggc   540

ggcgggagca gacgcgaccc tcgccgcttt cgatctcgaa gccgcggaga gccgatctcg   600

gctgctgggg ctcggctccc cgcgctctgc cttgcccttt cggcagaggg cagctccctg   660

cctgctgcag ccccgccact gtgcgcccgg cagcccaggg gtgcgcccag cccgcccccc   720

gagtggccgc cgggactcca gcagttggac cgaccctcgc cctccggcgc ctggacaaac   780

ttccttcctc ccgggcccct gcgccaagca agctgacagg cggctccctc gccggtctcc   840

tctgggctct ggccgggcga gcttgctctc tgcccctctc caaccccgag ccctggcgc   900

ctatagccgt ccccgcgcag cggctccaac aaagccagag gaccggagac gacccggcga   960

ggggctggga gtggcagcgg ggaccccaga gccagaagga ggcgtcccct cggcggggcg   1020

agtacagtgg gaaggggcag cgggaacgta gcggggagag aaagggggaag aaagtgttct   1080

gttctcggcg cgaacgcctt cctggctcgt cctcgttccc cttctcctcc tgcctgagcg   1140

cgtcccatgt cccgttggga attggcaggc ggggaaggga ggaggggaga ggggacgcgg   1200

tggcctggcg agcgagccgc tcccttacct ctgtccaggg tgagcggctg gaccactgtc   1260

aatgtcgcca tgtctgccgt gggagccgaa gtgacgctcg gcttcagcat cagcaaccgc   1320

tcgtagtgag aaaaaaagga ggagattggg ggcggggggtg gagagggaag acggaaagga   1380

```
ggggggaggag ggggaaggaa ggaaggtggt ggtggtggag aagaaagctt gggtgggttg  1440

gtagccagat ggagacgcaa ctgttccgcg gcggcagatc ttcagttgcg gtgcggagct  1500

gagcaggtat ccgagagcga ctgcatcgcc gggctctggg agggaaggct ctgccctaga  1560

actttgctat tccaccccca ggagcgctgg gtgggtgtag ctggcgggtt gcttcctttc  1620

aactttccac tctaataaaa tggtcagaat atacgtgtgt gcatgcgggt gcgtgtgtgt  1680

ataaggggaa gagagaggat ggaaagggga tatggggaag ggagtgggag atgagttttc  1740

tcagattaag agaaattgcc aatccaataa tcccatcccc tttagagaga aaatgcttcc  1800

attatcagaa atgtttggga tgtaattaca tttgcagtta atttctgttg aagttttcg   1860

gaatgttgac ctataacggc atataaagat aactgactaa aggccagcgt tccatcagta  1920

gatgttcatt taggacctga gtatattgcc tggagaaaaa aaaaaaaag gcaaacctct   1980

taaaagtgct tcaaaataaa aaacgtgtag gtaagtttct atcgctaagt ttttcttttt  2040

caagccactg ttaatacatt accaattcag taaatgtagc ttagaaacaa gtacagtgtt  2100

cagattttct ccgaattttt tacataccac atcctgtaaa catgccccac tcccctcac   2160

ccacccagca acaaaaactt tgctcttaat gtccaaactg attttggttg tctatgacta  2220

cgtttgaaaa atatgtacct agcactttc atgttgattt ctaaccagtg gttcagagat   2280

gccacttatc gattgattaa catatatgcc aggaattgag atagaagagt tacattgcct  2340

tgtgccacgc cttgatttag gagttcaatt tagtctccga cttcctgtag cctgtaatct  2400

agtgggagat ggtgttatta aaaacctgac tttagagtca gttgatcagg attaaattac  2460

gagagccttc aaatactggc tgtgacctct tcgccccaat aaaaaggcta ctttcactat  2520

cttgtcatag tagggattca tttcctgact acgaaatcaa gaaacataaa gaaaccttct  2580

ataagctgaa taggggtgac tgtgggtgct gaataggggt gactgtgggt gcaggattgg  2640

aaatgacaaa gctgcctcca tcttgtttcc tgtgacagag ctgaattgtt tgggctagca  2700

ataaactcta aaaggcagat actgttttat agcaaaatat ttgcatataa ttgatgccat  2760

tttcttctga ttacagatag gatttctgaa ggtctttttc attttatagt ctacaattga  2820

attttaaaaa acaacatttc accaatgtgg gaaagccaaa gatgattggc catatataga  2880

cttaacagac cctaagaaca aacctaaaat agtagttcga tatgtttatt tttatttagt  2940

atttaagaaa gaatgctgat cttgacattt gagtcttagt catgtactct tcggaagtca  3000

cacaatctct cactgatcct gtttcctcct ctgtcataca atggaaataa tatcattcaa  3060

tgtcacagag atctgtcata tgaggaaact aattctacct tgcaatctca cagagtttta  3120
```

tgagggtcta atggagtcat acatgtgact gtgctttgaa aacagtaaag aatatacaaa   3180

tttatttata caagcataca tcccctggaa ccgtgtggta agctctgtgc taggtgctaa   3240

ccatgcaaag attaatgaga tggccccctt tctgcccagt cttgcttggg agacagtgag   3300

caaaccataa gcttctgtgc agtactctaa gcactattaa aaggaagtgc cctcggtggc   3360

cagaggttgc aaaaacaact ttggtttttt accgttattc acatgccctg aattaagcaa   3420

cagaaagaag ttgagatgag cgcaatgata ccagagtgtg ttacaagctt ttgcacaaag   3480

ttattagacc tcactcggta actgaggata aaagaacata caaatccctt gacttctaat   3540

gtagttattt tacaacatcc tttattaggg aatatgtatt taagcagctt gattcatcag   3600

cccaaaagtc ataaattgta cccattccaa cacaaatccc tgattgtggt gtcagtgaag   3660

gtagagtttt ctttgtcttt ttgtttccta atgcatcctc aggactaaac atttcatagc   3720

atatttctgg acttctgcct tgagcttcct atttgaaatt tgctctgtca ttctttctct   3780

gtgttgactc tgtagggttg ttgttgtttt taaatcaaga ttaaaagaga aattaaaagg   3840

aagcataaat caccat   3856

<210> 781

<211> 3844

<212> DNA

<213> Homo sapiens

<400> 781

agagatcacg acaagatcta accagtcgcg cgtggtcccc ggcgccggag cgggccagct   60

cagcccggcc cagcccggcc ccgcgcagag cccccgccgc ccccgcgcac agagccgggt   120

gccccttgcg gtgcgccgga cgggaagccc cgaggggcgc aaggaggcgg ccgagggcaa   180

ggagcagggc ctggcgccgc tggtggtgca gacagacagt gcgtcccccc tgggcgccgg   240

acacctgccc ggcctggcct tttccagcca cttgcacggg cagcagttct ttgggccgct   300

gggagccggc cagccgctct tcctgcaccc tggacagttc accatgggcc ctggcgcctt   360

ctccgccatg ggcatgggtc acctactggc ctcggtggca ggcggcggca acggcggagg   420

tggcgggcct gggaccgccg cggggctgga cgcaggcggg ctgggtcccg cggccagcgc   480

agcaagcacc gccgcgccct tcccgttcca cctctcccag cacatgctgg catctcaggt　540

aaggcctgtg accccgcggc agcgccagcg agggagaagg cccagggagc tggcggcgag　600

gccagcggag ggcctgaggg gtgccagggt cgctgggatc ctctggcagg caagaactcc　660

atccagggga ggccccggga tgccctttag acacctgggt ttctgagaga cgaggactgt　720

gttgtaagtc caggggctgg ccagggcgcc gcttctgact cccgtgtgac ctttggcaag　780

tccctgaccc tctctgggcc tgcttccttc cctatagccc cagcgaggag tgcggtgccc　840

atcgagactc ttctcaccct cacagaccag ggccacccct ggcttgtgaa gtcttctctc　900

ctggcctcag gacatttttc ttgagaacaa agacccttgg ctccctgtcc attctgaaag　960

gctaaggtgg ccagacagac aaagggagaa ggaacatttg cattattttc tggacagttg　1020

accaccagcc ctcccagagg tctctggccc ctcccaggcc ttctacgaag tcctctgtcc　1080

tggtgaagga caaggctggt ctttccccta ccttgagttc ccagcacccc cagccacatg　1140

tcagggatga gaactcagct cttcaggccc cattgaaatt ccaagctccc aggggagtgt　1200

tgacgaaaat gtggctgggg cacagtaagg agatccgatg gggacagtgg cctctttggt　1260

tgcttgggtg gaatattccc tgtggaaaga tttggaatct cttcattcat tttcttccct　1320

ctgaggtttc tggcaaattg aacccctgag atcttatctc aagggaagga aaatagcagt　1380

tcaggtctga gaaagctcct ttgcttcagc agcaaatatt ttaaaagttg ggttggtggg　1440

tgggggggtg gggggttggg aggcaggcga ttctgaaatg agttttacac acagctcagt　1500

gttagggtgt gtggagtgtt tgaggtatca ccatcactca tctggggctc tgggctggaa　1560

gggaagcctc tggagaaagt tcagggccca gaggtttaat ctgcacccct gattatttgt　1620

gtatatgaat gcctcctccc cagacaaact ggtaataatc accagcatca cagaggtcat　1680

gaggaagtca gggcttctag acacagcctg gccaacaggt gcatgacccg ggtgagaata　1740

ccagcacctg ggaggcatcc gttggtaggg ctgctggtgg ttacattccc aggccagtgc　1800

agcccatccc agacatcagg tagagccaaa tcccaagaga actgaagcct ccctccttcc　1860

tcccaacctg ggatgccagg tctgaaatgc ccagtaggac ctgactgtct caggaggggg　1920

tattttctca ggcctgatga agctgcctct tttcttcttc ctgctagagc caggcctgag　1980

gctccctggg agcccagtgc aatcatcagc cccctgccct cctccccata cccactagct　2040

ctggggagta agccattatc tcaaaggtca ggccgtgcac cagccagacc tcatgaactc　2100

aggaaggtgc ttgtccagga gttcctggct gctgtgccct tcacaggcaa agactgcatt　2160

ccttcctcag ctgccagtga ggtgctgcca ggcattccct gtagaacttt caggccagtt　2220

```
tatgaactgg ttggcacccg tgtcctcctc ctggcccagg caggagaacc atgagcaggc  2280

agaaggagac tttgcaaagt gccttcccca gcatgtgtgc cctctgccct tcagagcctg  2340

cagataggag gggtggcgag gacactgttc tcaatgagca gaacctccaa gacacccaaa  2400

gctgcctgtt tgccacctgg ccctatgcct gccccgtttt ctccctcaag gccttcaccc  2460

gtgctagggc agtcacctgg aatgtccttt ccattacccc tgctgtaatg cccagcacag  2520

aacttgatgg caggcctttg catggtagcc tgaagcgatc tcacccttct aactgggttt  2580

ggccacaggc acactggctc atgcttacct gtgctgcctg tggttatagt tatgcgaatt  2640

gtggttttac atccctaaaa cagaagggca cggtgtccag gggatagcac ccagcccaac  2700

ttcagaaaga cttcaggcaa gatgtctaac cctcgtcttg ttctgtttct tccagggaat  2760

tccaatgccc actttcggag gcctcttccc ctaccccTac acctacatgg cagcagcagc  2820

cgcagccgcc tcggctttgc ccgccactag tgctgcagct gccgccgccg cagccgccgg  2880

ctccctctcc cggagcccct tcctgggcag tgcccggccc cgactgcgtt tcagccccta  2940

tcagatcccg gtcaccatcc cgcctagcac tagcctcctc accaccgggc tggcctctga  3000

gggctccaag gccgctggtg gaaacagccg ggagcctagc ccctgcccg agctggctct  3060

ccgcaaagta ggggccccat cccgcggtgc cctgtcgccc agtggctcgg ccaaggaggc  3120

ggccaatgaa ctgcagagca tccagagact ggtgagtggg ctggagagcc agcgagccct  3180

ctccccaggc cgggagtcgc ccaagtgagg ggctgcccag ctgctcccct gccacgcagg  3240

ccacccgggc tgcctgcccc tgctgcttgg gacgtgtaca gcacagaatg agtatttatt  3300

taaataaagg agaaaagtgg gctgcagcag ccggaataga gcctcgtctg gcaagtcggg  3360

gcctgggaca cttccctggg cctcaacaag gatcaggctg ctggaaacac agtcacttgg  3420

gagctgctgg gctaggtcca gatccgctcc agcgtcaagg tggcatccga aggtgtctct  3480

ggtcttccag cgaggtggga gaggcctcat ccagggccca gcggtccctg cagaagccag  3540

aaggtgcagg ggccaggggt gggagcatcg gagggagtcc cagagccctg gaccttgggc  3600

ctagaccgcg tgataaaact gggttgaggg atgctggaac cagttacgac tgaagtcagt  3660

gtagacctga gctgggaggg aacctgttag tctccccacc tcttccctga agagacaggc  3720

acccctccca gccgtggtca acggagggag tggcacttct gccttgagtc cccaggggaa  3780

aaaaaaaaaa aagatattta tgaaataaat ggtaatttgt gtaaataagc tttaaggttc  3840

ccag                                                               3844
```

<210> 782

<211> 3281

<212> DNA

<213> Homo sapiens

<400> 782

gcacacagcc atccatcctc ccccttccct ctctcccctg tcctctctct ccgggctccc   60

accgccgccg cgggccgggg agccaccggc cgccaccatg tcttcctcgc tgtccgtgcg   120

ccgcagctac tcctccagct ctggatcgtt gatgcccagt ctggagaacc tcgacctgag   180

ccaggtagcc gccatcagca acgacctcaa gtccatccgc acgcaggaga aggcgcagct   240

ccaggacctc aatgaccgct tcgccagctt catcgagcgc gtgcacgagc tggagcagca   300

gaacaaggtc ctggaagccg agctgctggt gctgcgccag aagcactccg agccatcccg   360

cttccgggcg ctgtacgagc aggagatccg cgatctgcgc ctggcggcgg aagatgccac   420

caacgagaag cgcatcgaca gcttgatgga cgaaatctct tttctgaaga aagtgcacga   480

agaggagatc gccgaactgc aggcgcagat ccagtacgcg cagatctccg tggagatgga   540

cgtgaccaag cccgaccttt ccgccgcgct caaggacatc gcgcgcagt acgagaagct   600

ggccgccaag aacatgcaga acgctgagga atggttcaag agccgcttca ccgtgctgac   660

cgagagcgcc gccaagaaca ccgacgccgt gcgcgccgcc aaggacgagg tgtccgagag   720

ccgtcgtctg ctcaaggcca agaccctgga aatcgaagca tgccggggca tgaatgaagc   780

gctggagaag cagctgcagg agctggagga caagcagaac gccgacatca gcgctatgca   840

ggacacgatc aacaaattgg aaaatgaatt gaggaccaca aagagtgaaa tggcacgata   900

cctaaaagaa taccaagacc tcctcaacgt gaagatggct ttggatattg agattgcagc   960

ttacaggaaa ctcttggaag gcgaggagac ccgactcagt ttcaccagcg tgggaagcat 1020

aaccagtggc tactcccaga gctcccaggt ctttggccga tctgcctacg gcggtttaca 1080

gaccagctcc tatctgatgt ccacccgctc cttcccgtcc tactacacca gccatgtcca 1140

agaggagcag atcgaagtgg aggaaaccat tgaggctgcc aaggctgagg aagccaagga 1200

tgagcccccc tctgaaggag aagccgagga ggaggagaag gacaaggaag aggccgagga 1260

agaggaggca gctgaagagg aagaagctgc cagggaagag tctgaagaag caaaagaaga 1320

agaagaagga ggtgaaggtg aagaaggaga ggaaaccaaa gaagctgaag aggaggagaa 1380

gaaagttgaa ggtgctgggg aggaacaagc agctaagaag aaagattgaa cccccatttc 1440

cttaattatt tcaggaataa ttctcccgaa atcaggtcaa ccccatcacc aaccaaccaa 1500

ccagttgagt tccagattct atgtgaatta aaaagtcaat atatgtataa ttctgagatg 1560

acttaggttg gacattcaat gttgtgctat gaatttcctc tttatgcaga gtatctgttt 1620

gcttgcagag tggctttctg gcttgctgcc agcctgtgca tggtccacgc ttatgagttc 1680

aggatctacg gcaatgtgaa tcattcagat gtttacaata aaaaacacca catgagtaaa 1740

tgaattcact aatgttaatg ttaaacttca tggaaaaata gtcctttgaa ccttcggtgg 1800

ttagcaatta aagaccctga gttatgtgca ataaatagta aataaagtta taccgaatga 1860

tgtatttttt gctgtggttg ttacttaatt aaaatacctt aaagatggca ccaatataaa 1920

gtatatacca gtggactatt gacctccaat tttttaaaaa gttgaaattt taacaattac 1980

caatactttt ttttcttcct tcaattggaa attctgaggg atacagttat gtcatgatta 2040

cttgtgaaat ctctccccac aaaaatttta ctgataataa acatgagtaa atgagaaagt 2100

ctataaataa caatacactt tgcctcataa cacgtgttgt gttaggtttt gggatggctt 2160

tctagggagc aattctgaaa ttacttgaca gatacactct ttatggtaaa caggtcattt 2220

cagagtctag agtgctaacc attacactat ggaaccatga taaataggtc atttcaaact 2280

gatatgtcac aatgcaatat ggatagaata tgaatcccat acattcatcc ctataactgc 2340

attttaaaat atagtctaaa tatcatggga ggaggttaaa acctgagaac atggtacaat 2400

aagaaggaat aatttttat ctatatataa tttcaggaga agggattaaa actaccaaag 2460

gttatttgcc actccactgc aaacatgttg cctgcaatcc tgagctcatg atttagtgtg 2520

ttgttaagcg taattctgtt gcctcaagta aataccactt aatgctacac atttttaaac 2580

ctttaaaagc tacagacaca agtaatgaaa ttatgagtca cttaagggg gaggtaatat 2640

gcttgtatgt tacattgaca ttgctctgca tgtctctact gggaaatatt tggatttcaa 2700

tgatagcttg actggttgga cattgcatca aatacacgcc ccatgtatcc tttctgtcgt 2760

aaagttaaga acgctcttgc atttgatgtg gaataaatat agatgatatt actatctgct 2820

attctgcctt tgttctgaaa caattgcttt gtcagctaat ttcattcaat atttgttttt 2880

tagacgatct ctataagtta ttaatttaac ctgaaaccaa agtggtctcc atttaaagtt 2940

acttaatccc tttgtaccac ctatttctag ttaaatatat gttgctatgc aaataggtaa 3000

agtgcttcct tgccatgatg gtaatggatt ggaactatga aggctctcag tgtattggct 3060

tctgtaaaga tgaggcgtct cctcagaaac aaaactttc acatttctgc ttactagacc 3120

tgggttgatg tacatggtaa gtctcaaaca gatgcaagct atgtgcaaaa agtaacttta 3180

gccaaatgga aatagctgga tgctttgaga attacttggt tgaagtaaga aaactgtacc 3240

atcctctatc ctgtgtgcca taataaaata gtaaaaaacc t 3281

<210> 783

<211> 3579

<212> DNA

<213> Homo sapiens

<400> 783

gtagaggtaa acttgctttt ggctgggcgt ggtggctcac gcctgtaatc ccagcacttt 60

gggaggccga ggcggatgga tcacctaagg tcaggagttt gagaccagct tgaccaacat 120

ggagaaaccc catctctggt aaacaaaaat acaaaattag ccgggtgtgg cggcacatgc 180

ctgtaatccc agctacttgg gaggctgagg caggagaatc gcttgaacct gggaggtgga 240

ggttgtggtc agccaagatt gcaccattgc actccagcct gggcaacaag agcaaaactc 300

tgtctcaaaa aaaaaaaaa aaattaaaaa cttccttta tccagcagag ggctggaaaa 360

gttggagttg ttttggtat acttggagag ctggctttct aaagtgctgc tttgaggact 420

gttgtgtaaa gcacttgatt cgtcttccct ttgctggagt tatgggcctg ggctttaca 480

ctgggggttct gaagtaacaa acaaagtcag tccagaaata gttgctcagc aatctcattg 540

ttacagtgtc gcaaaatgag ctcatattag ctttattttc tgctaccaat agagtgttcc 600

taagtattta aagtgtgtga ctcctttctt atagagccag caagctgtat tggaatcact 660

tttccagtgt tgtaaatgtt atttttgtga gtcagtcagt atactcgtga atgacagaaa 720

aacagatccc aacaatgcaa agtattatat gtgtaaaaaa gaacagaaaa aagaagctgc 780

cttgttagta acgggctcta tggttttct cataagaggt catgacgcca gtcagatcac 840

actagccttg ggcacagctg cctcctaccc cagggcctgc caggctctcg gggccatgct 900

gtccaaagga gccctgaacc ctgctgacat caccgtcctg ttcaagatgt tcacaagcat 960

ggaccctcct ccggttgaac ttgtaagttg cttctcaaga atccccaatg tcagctggta 1020

aggtgacttt ggaaagtctg tgcttgtctg attgtctgaa ggctgtgaat gcaaatccat 1080

cattgtcctg gtccttcctc agtcacactc tctgcctgga gcctgttggg cccctgctgt 1140

gtagggaacc ctgaggggag gtgggtgagc agtgccctca cgcctgccat cccgaactgg 1200

gcatatgctt ctcctcagat ccgcgttcca gccttcctgg acctgttcat gcagtcactc 1260

tttaaaccag gggctcggat caaccaggac cacaagcaca aatacatcca catcttggcg 1320

tacgcagcaa gcgtggttga gacctggaag aaggtaccat cggttctggg aatttgtgga 1380

ttttttagga gacaaatatc ctcctctgct ttgatattat tttggaattt tggctgcaag 1440

aaatcttgac cctccctagt atcaggcatg tgttttcttg tgtttctgcg tagagaaagc 1500

actaaacgtc tccagaaaat gtgcgtaatg tctccaatgc tctgcaaacc gtaaattgaa 1560

atgtgactaa agaaatgaaa ctgatttccg taagacatgg acaaacacta gtctcattgc 1620

ttttcagttt ctgtacactg tgtgactgtg aagtttgaca gctgaattga ctcccaactt 1680

aagtagaaat agggaaagtg ctttgcaaga agtggccgac accagaacac cccgacagca 1740

gggatatctg ccctgtcagg ctcaccagct tgtgtgtgtg ttttcagaac aagcgagtga 1800

gcatcaataa agatgagctg aagtcaacgt caaaagctgt cgaaaccgtt cacaatttgt 1860

gttgcaacga gaacaaaggg gcctctgaac tagtggcaga attgagcaca ctttatcagt 1920

gtattaggtt tccagtggta gcaatgggtg tgctgaagcg ggtggattgg actgtatcag 1980

aaccaaggta ctttcagctg cagactgacc atacccctgt ccacctggcg ttgctggatg 2040

aggtaagagg gcggagagct gttcacagcc tacacagtgt ctgtctcatg ctgtttacgt 2100

tggcattaac attgcatcta ttcagtgagt ttagaggata ctcttctcaa aaatagttat 2160

ttctgtcctg aggattttcc tcttaaggac ctagcttcat tgactgcaga aatttcttaa 2220

cctcagtcaa gtgttactgg aagctgatgg ccctggctta ggtgtcagga ccttcttcca 2280

cagtgataag ctctttggtg gctgtgacag tgcccagttt ctctgtgtgc tgagcgtgac 2340

cacactgctc agcgaagctc cctctggcct gtttgtagat cagcgcctgc caccagctcc 2400

tgcaccccca ggtcctgcag ctgcttgtta agcttttga dactgagcac tcccagctgg 2460

acgtgatgga gcagcttgag ttgaagaaga cactgctgga caggatggtt cacctgctga 2520

gtcgaggtta tgtacttcct gttgtcagtt acatccgaaa gtgtctggag aagctggaca 2580

ctgacatttc actcattcgc tattttgtca ctgaggtcag caatgcaccg ttggtttcat 2640

gtttcatact gtttacacta gcactgccct ttttggctta atttagttca ttttgtacct 2700

aactgagaac tgtgctttct gatgtagtga tgacaatgac agatactcgt ttaccaaaaa 2760

gcaccttctg cctgcagcag ctgtatgaca cactttacct ccattaccac cctgggcatc 2820

tgaatgttgg agatgggtgg tgtcaccggc cggtgggggt ggggagggat tttttccaaa 2880

ctgatggcca tttcacccgg atgtcggtgg atgccccgca ctagtgtgcg gaagaagtca 2940

ccctgtgctc ccccacgcag gtgctggacg tcattgctcc tccttatacc tctgacttcg 3000

tgcaactttt cctccccatc ctggagaatg acagcatcgc aggtaccatc aaaacggaag 3060

gcgagcatga ccctgtgacg gagtttatag ctcactgcaa atctaacttc atcatggtga 3120

actaatttag agcatcctcc agagctgaag cagaacattc cagaacccgt tgtggaaaaa 3180

cccttttcaag aagctgtttt aagaggctcg ggcagcgtct tgaaaatggg caccgctggg 3240

aggaggtgga tgacttcttt acaaaggaaa atggtagcag cttcagtgag aaactgccct 3300

tacaaacagt cccttctctg ctgtcaatcc aatactgctc ccaaatcctg ttttcagtgt 3360

tcatttccct caaggcaggc gctgggctcc cacgacccct caggacagat ctggccgtca 3420

gccgcgggcc gctgggaact ccactcgggg aactcctttc caagctgacc tcagttttct 3480

cacaagaacc cagttagctg atgtttatt gtaattgtct taatttgcta agaacaagta 3540

ataagtaaat ttttaaaaag ccttaaaaaa aaaaaaaag 3579

<210> 784

<211> 4104

<212> DNA

<213> Homo sapiens

<400> 784

tcatgatggc tattgctgtg actggagcca agagcccagt gtgcaattct tccttgggaa 60

ggggctgcct ggtggtggac acagctgttc agatacacag gtttgcagct gcctgtcgaa 120

gtgcctgccc ctgctgttgg ggcaaggagg aagcaggtgc aagaacaagc gacctcaggg 180

ctgggtgggg gtggccggca ggggaccccg cagtggaagt gctgtcatca tcaccatttc 240

acagctggga aggtggaggg ctggccagat gcacccagga acaaggagtg ggcctgctgc 300

agggccggca ttcctgcccg ggaaaagcca tgtagggaac ctgcctctcc acttggcact 360

gagccctgga gaccctcctc gaagtgctcc gtggctgggc agggtgggcc ctgctaggtt 420

tgagctttcg ggggtagggg ctcatggggc atcccccaga cctgcagggt cttggtttgt　480

tggatgcagg agacctagcc ctgggccgtg tccccaggtg ggtctccagg taggcaggac　540

agaaggaacc cagagcaccc cacctctcag gtcagtgcgg ctccacacgg tcccctcag　600

gctctgctga ctccccaaag ggattctgag catgtgcaga acctctgctt gcctgggaca　660

cccctgcatg ctcctcctcc aggcccccac cctcgaaggc gtggccttcc cagcccctct　720

ctggctgctg accagtgggc tgggtcccca ggatggctcc tcaactccta ggcaggcctc　780

ctagcactga ggcaggtctc tctgcaggct ggacatggag tggccttgcc ctgtggggga　840

tcggctgggg ctgagtttgt ggggtgtcag agtgcatccc ccacatacta cctcctgacc　900

agagcagcct gcagtgggag aggccagtgg ctcggcaaat gccctctctg atgaccccaa　960

gagcttgggg tgaggaggcc caactgacca aggttaccac ctgctggtcg ccttttgaac　1020

ccagaactgt gtgatcttgg ggaggttgtc ccacagtgca ttggcctcag atgcctgaga　1080

cagtgctgag cagctgtggg caacaagggg tttgtgagcc cgccttcgtg acttcattgc　1140

acaaatggtc actgagtgcc accctgggcc agcgatagga tacacaggtg aatgatacag　1200

ccacttctgg ctttgtgggt caacagtcta ggttaaaccc agggaggctt cctggaggtg　1260

gtgacaccta ggctggactt ggaactcctg gggtttcctt agttgagttc cttcccactg　1320

ggcctcagtt tcaccatctg aaaaatgaag gattggctca catcagtggt tcctgggctg　1380

gagtggagag cgcgttgggg tacagaagca gtccacccca gagtttctga ccagcaggtc　1440

tggggctagg cctgagaatg tgcattctaa cttgtgtgag gcaccgctgc tggcctgagt　1500

ttgaagggag cattgtatga gtctgagcca tgacctccct gtcctggagt gggggcagca　1560

ctgagcctgg gggcctggac attccaccca gcgtcatcgt ggggcctttg gttgcgttct　1620

tgctctcctt gccaaagact ttctaagaat tccaaggaaa cctttaggtg tttggtggga　1680

aaaccagtga cgtctgggcc agatgctctt ttttccctgg tgggagggac agggacgtgc　1740

tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tgttgacgtg　1800

gggggtgtgg gcaggtggtc cgctctctcc ttgtaaggcc cctacagggc agaggcccac　1860

ggtcctgtca tggcactgaa gtaatcatgg caacaatttg ctctgtgcag tggggaaact　1920

aaggccaaaa tggcaggagg gtctcgcttc tccacctgac ctcagccgct ggcacctgtg　1980

ctgccttccc ttgagggcca ggaggttgag gctggctctg tgtgcaggca aggccacagg　2040

caggccacct ctggccctca ggctggcagt tgctgcatcg tccagtcccc acttggctcc　2100

tcccaggcat ggctggctgt ctggggcact ggggaaacag gcccagaggg cttcagactc　2160

```
ccctgggctt cacaagaact cccagctgca gggtgtggtg agaccctgag ccccatcaca    2220

gcgggccatg ctgtggagga cagtcccagt gtgggcaccg aggcctccag gaggcccagc    2280

tgctcagaca tctgcagctc aggggcactc agactcacag gccccaaagc cagttccaga    2340

tctctctcta gccctgccca cagccctgcc tcatactggt cagccacttg gcccaagacc    2400

ttcaccatgt ggagtggccc tgctcgccac tcctgctacc gcctgcctga gcaagctctc    2460

cttgggctgt ggcaagaccc accatccacg tggcagccac cgaaactatg ccccagacgt    2520

ccgttgcctt ctccagcatc cttgggccca gctgtagcgg acaggtgcag cctggcatgg    2580

gggagcgtgg aggcggggcc ggtggcggct ccggggacct catcttccaa gatggacacc    2640

tcatctctgg gtccctggag gccctgatgg agcgccttgt tcccacggtg gactattacc    2700

ccgataggac gtacatcttc acctttctcc tgagctcccg ggtctttatg ccccctcatg    2760

acctgctggc ccgcgtgggg cagatctgcg tggagcagaa gcagcagctg gaagccgggc    2820

ctgaaaaggc caagctgaag tctttctcag ccaagatcgt gcagctcctg aaggagtgga    2880

ccgaggcctt cccctatgac ttccaggatg agaaggccat ggccgagctg aaagccatca    2940

cacaccgtgt cacccagtgt gatgaggaga atggcacagt gaagaaggcc attgcccaga    3000

tgacacagag cctgttgctg tccttggctg cccggagcca gctccaggaa ctgcgagaga    3060

agctccggcc accggctgta gacaaggggc ccatcctcaa gaccaagcca ccagccgccc    3120

agaaggacat cctgggcgtg tgctgcgacc ccctggtgct ggcccagcag ctgactcaca    3180

ttgagctgga cagggtcagc agcatttacc ctgaggactt gatgcagatc gtcagccaca    3240

tggactcctt ggacaaccac aggtgccgag gggacctgac caagacctac agcctggagg    3300

cctatgacaa ctggttcaac tgcctgagca tgctggtggc cactgaggtg tgccgggtgg    3360

tgaagaagaa acaccggacc cgcatgttgg agttcttcat tgatgtggcc cgggagtgct    3420

tcaacatcgg gaacttcaac tccatgatgg ccatcatctc tggcatgaac ctcagtcctg    3480

tggcaaggct gaagaaaact tggtccaagg tcaagacagc caagtttgat gtcttggagc    3540

atcacatgga cccgtccagc aacttctgca actaccgtac agccctgcag ggggccacgc    3600

agaggtccca gatggccaac agcagccgtg aaaagatcgt catccctgtg ttcaacctct    3660

tcgttaagga catctacttc ctgcacaaaa tccataccaa ccacctgccc aacgggcaca    3720

ttaactttaa gaaattctgg gagatctcca gacagatcca tgagttcatg acatggacac    3780

aggtagagtg tcctttcgag aaggacaaga agattcagag ttacctgctc acggcgccca    3840

tctacagcga ggaagctctc ttcgtcgcct cctttgaaag tgagggtccc gagaaccaca    3900
```

tggaaaaaga cagctggaag accctcagga ccacccttct gaacagagcc tgaggcggat　3960

gcagcccgcg acgccagagg aagcacgtgc actaactggg tttaaatttt gactgatgtg　4020

ggttgagatg aggaggcctc actggttggg gtccattttg tatataactt ttatgagaaa　4080

aaaatggtaa ttatttcacg cgtc　4104

<210> 785

<211> 2682

<212> DNA

<213> Homo sapiens

<400> 785

aaccgagggt gcccgctgca aggttaggtc tcctggcctc gtgcttcaaa caggaattaa　60

tagaatccca ccaggtggtg tttgtgaggc gtagatggcg aggatatctg cagctgcagt　120

ttgctcattc tcacggctgc actgcattgc actgtgtgag cagaacacaa tttatccttc　180

cactgctgat gggcatttgg gcggtttgca gtttgggatc tggccagtcc tgctgttgtg　240

agcattctta agcctgcctt tcggtgaatt cacacgcccg tggggacgct cactctcaga　300

gcacagcttc cagaggagag aagatacccc cagcatccat gagaagagac ctccgggaga　360

agcttgtgtg ggtgtgccga ccactggccc cagttgaggt cccagccaac atcagctccg　420

acttccagcc atgctcacca acttctcctg cccactccct atcaaggaaa gtcccataa　480

tgtatccatc aaccaccatg gctaatgcac ccggtctggt gagctgtacc ttctttctgg　540

cagtgaatgg tctgtattcc tctagtgatg atgtgatcga attaactcca tcaaatttca　600

accgagaagt tattcagagt gatagtttgt ggcttgtaga attctatgct ccatggtgtg　660

gtcactgtca aagattaaca ccagaatgga agaaagcagc aactgcatta aaagatgttg　720

tcaaagttgg tgcagttgat gcagataagc atcattccct aggaggtcag tatggtgttc　780

agggatttcc taccattaag attttggat ccaacaaaaa cagaccagaa gattaccaag　840

gtggcagaac tggtgaagcc attgtagatg ctgcgctgag tgctctgcgc cagctcgtga　900

aggatcgcct cgggggacga agcggaggat acagttctgg aaaacaaggc agaagtgata　960

gttcaagtaa gaaggatgtg attgagctga cagacgacag ctttgataag aatgttctgg　1020

```
acagtgaaga tgtttggatg gttgagttct atgctccttg gtgtggacac tgcaaaaacc  1080

tagagccaga gtgggctgcc gcagcttcag aagtaaaaga gcagacgaaa ggaagagtga  1140

aactggcagc tgtggatgct acagtcaatc aggttctggc ctcccgatac gggattagag  1200

gatttcctac aatcaagata tttcagaaag gcgagtctcc tgtggattat gacggtgggc  1260

ggacaagatc cgacatcgtg tcccgggccc ttgatttgtt ttctgataac gccccacctc  1320

ctgagctgct tgagattatc aacgaggaca ttgccaagag gacgtgtgag gagcaccagc  1380

tctgtgttgt ggctgtgctg ccccatatcc ttgatactgg agctgcaggc agaaattctt  1440

atctggaagt tcttctgaag ttggcagaca aatacaaaaa gaaaatgtgg gggtggctgt  1500

ggacagaagc tggagcccag tctgaacttg agaccgcgtt ggggattgga gggtttgggt  1560

accccgccat ggccgccatc aatgcacgca agatgaaatt tgctctgcta aaaggctcct  1620

tcagtgagca aggcatcaac gagtttctca gggagctctc ttttgggcgt ggctccacgg  1680

cacctgtagg aggcggggct ttccctacca tcgttgagag agagccttgg gacggcaggg  1740

atggcgagct tcccgtggag gatgacattg acctcagtga tgtggagctt gatgacttag  1800

ggaaagatga gttgtgagag ccacaacaga ggcttcagac cattttcttt tcttgggagc  1860

cagtggattt ttccagcagt gaagggacat tctctacact cagatgactc taccagtggc  1920

cttttaacca agaagtagta cttgattggt catttgaaaa cactgcaaca gtgaactttt  1980

gcatctcaag aaaacattga aaaattctat gaattgttgt agccggtgaa ttgagtcgta  2040

ttctgtcaca taatattttg aagaaaactt ggctgtcgaa acatttttct ctctgactgc  2100

tgcttgaatg ttcttggagg ctgtttctta tgtatgggtt tttttaatg tgatcccttc  2160

atttgaatat taatggcttt ttccattaaa gaataaaata ttttggacaa tgccgataaa  2220

tgtatgaagt tagtatccac atcataaatt cagagtgatg tttagcagta aatcaatatt  2280

ttgaagtgat acacagatgt ctttcctccc cacaaacttt tttaaacaaa aaacaagacc  2340

tcttttcttt agatggtgcc acctatgccc accacaacag agattttaca tggaaaccgg  2400

gctcagtgag aactgatttc ctgcccaata tttgtctttg ggctgtctct agtgactaat  2460

tattaaggaa tctagctggt tatacagttc aaggctttct atgttgttaa tgaacctcaa  2520

aatagccgtt aagacatgaa atacagcagc aggttaccaa tgcgaacagg tagttcgcat  2580

ttatgtaaaa cattcagaaa atgaagtttt gaatttgttg gaacattcaa aggacttgag  2640

agcattttat tgtaacttaa aaaaataaat acaactgtca ct                      2682
```

<210> 786

<211> 2610

<212> DNA

<213> Homo sapiens

<400> 786

tgtcagatgc agcccagcag agaggccctg gaactcagag gactcccaaa gtccgtgagc   60

acagtgtcct caacaaaacc cccctcacc acaccttcct caacaaaccc ctcacgccaa   120

ctggctctgg aggactgtgt ccaattgcga gctgccttgg atttaggtta tggtcctgaa   180

tgctgctgcc accaccttcc tgaagtggct cacaagtcct cagcctccgc cggagcccca   240

agtgccagac tcccccttca gccgcacagc ctgggcactc ggaccaagct gccaccttcc   300

ctgtgcttgc cggggccagg taggacacgt ctcacaacag agcctttcc ggggggcgccc   360

ttctgcagtg attcttgcag tcctgcactc tgctgtgttc tgctcacacc aggcaggggg   420

agagggagcg tggcccctct gggaagctcc caggacggca ggggtgggtg ctgccctaca   480

gatacagtac ctgctgcaca gggaatggac gcctcctgga cggtggcccc agcccaggaa   540

tggctgggac acccactcca gtcttgccca cagtctgctt ccagaggaca cttgcccctg   600

cctctcccca cccccaccac gccctgcatc tcgcagccac ctggaaggag atgtagaccc   660

cactgtggta aggagctgtt cagagccccc ggagccctcc acttcctacc acgcagacat   720

cctgctgctg tgcgacacag atggaccagg gcttgtcctg aaggtcccag gatgcacatt   780

cctcagggat ggctactctc ctccccctcc ctgttaacag actggttttc catggactcc   840

tttaagcccc caagtctggc ctctggtcaa atttcaaaga catgatgggg tggtctgtta   900

agactgagta gctcatgtgg caccaggtga gggctgctca ggcctgcatt aaggaggggа   960

gcccgaacaa cgggcctccc ccttcccccc acccacaacg aagcagctgc tgctggctcc   1020

tctcccagag actggaagag aattgatgag aacaccgggg acccagcagt tccactccca   1080

ggcctaaatc taagagggca aagtcaagcc tccactcaaa accttgtgtg tgcacacact   1140

cccggcagca ggattcacaa cagccacgga gtggaagcag agccagctgt ccagtggagg   1200

atgaacacac agcgggggaag acatgggccg tgcaaccgcg gctgccacag agaaagcgca   1260

ggagcagtgc atgctgcgtg agaagctggg caccaggcag aaagcagagt ccgggagctg   1320

```
ggggaggagg ggacagcaag tgcctgctca atggccctga ggtttaaggt gatggagctg   1380

atctagatag aattgggggt gatggctgta taactgggaa tacactaaaa tccctgactt   1440

gtacactgtg gccacctgaa gtgaacagta cacgctttct gtctcagtaa agctacgcaa   1500

agaacagcag acatcccgca tgaagtcagc tctccagggc cgcaccatgg gagctatggg   1560

ctggcagtgg ccggctctgc tcttgacaca caggaaggat gcaaactcag agccccagtg   1620

gggtcacggc cttgcccgga gaactccctc tggggatggc agcctgccgt ccccttgcct   1680

agcctggatg ccacatcccg cggcagcgaa gcagcctcct gcttgaccgt ctggcccggg   1740

gacccttttg tctcctgggt cagtttcatt ctttccccag gctgtgctcc tgatgaagca   1800

gcatcgtagc tgatgttgaa gggcctcacg ccagcaccta ggctggtctt ccctgggtgc   1860

ctgcttgagc acgtggccca aaacagccgt tgcatggggc actcagaacc caccacaccc   1920

tcgccccttc ccagcccgcc accctgtggc tgaggccctg tgccttgagc aagctgctgc   1980

ccctcctcct cctggtccag ttctgcccac acctgggtgc ccacctcccc tccctgtggt   2040

ctccaggagc tgcccccaac atgccctggg cagcagtgct catcgtagcc ccgtctgtgg   2100

cctggacagg ctctgaccac tcctgcgttg gcacagcttc ctcgggaggc tcctgccaac   2160

accactcggc acggtgggct caacacggca gcggcaacgg gtgggagtac ttgcctctgc   2220

ctggcccgaa tggcggtttt ccatttggat ttggggatga gcagccaatg agcctatctc   2280

attcccgtta acgtgagaga aacatccaga cgctatcctc aggtctcaca cacccccgcc   2340

gtgctctgca ccacacctgg caggggcacc cccgactgta tgctgggcat cagctcccag   2400

gcccgagcgc ctcacctcac actggggatt ggagccctca ggccctagag acactggctt   2460

gagaaacttt tgagatggag tctcgctctg ttgcccaggc tggagtgcag tggcatgatc   2520

tcagttcaca gcagcctctg cctcctgcgg gttctggaaa ttcttgtgcc tcagcctcct   2580

gagtagctgg aattacaggc gtgtgccacc                                    2610
```

<210> 787

<211> 2532

<212> DNA

<213> Homo sapiens

<400> 787

```
gaggcggcga gtcccgcggc ggcggcgacg atggggctgc gtgcaggagg aacgctgggc    60

agggccggcg cgggtcgggg ggcgcccgag gggcccgggc cgagcggcgg cgcgcagggc   120

ggcagcatcc actcgggccg catcgccgcg gtgcacaacg tgccgctgag cgtgctcatc   180

cggccgctgc cgtccgtgtt ggaccccgcc aaggtgcaga gcctcgtgga cacgatccgg   240

gaggacccag acagcgtgcc ccccatcgat gtcctctgga tcaaaggggc ccagggaggt   300

gactacttct actcctttgg gggctgccac cgctacgcga cctaccagca actgcagcga   360

gagaccatcc ccgccaagct tgtccagtcc actctctcag acctaagggt gtacctggga   420

gcatccacac cagacttgca gtagcagcct ccttggcacc tgctgccacc ttcaagagcc   480

cagaagacac acctggcctc cagcaggctg ggccatgcag aagggatagc aggggtgcat   540

tctctttgca cctggcgaga gggtctgact ctgggcaccc ctctcaccgg ctacaaggcc   600

ttggactcac tgtacagtgt gggagcccca gttcccacct ctgtgacaat aggatcatgg   660

ccttaccctt gaagcattac cgagaaggag aacagagatg ggcttgaaga gccacgtgct   720

gccggctcca aattcccaag acaaggatc cctctgcatt tttgtctatg taacctctta   780

tatggactac attcagctgc aaggaaagga aaaccttgat tgcagtggtt taaacaaaca   840

gaagattgtt tttccacata gcatggattc tggagatggg tggctaatgg tattggttca   900

acaactccac gaaggtaggg gtcacgtctt ggatcctttt gccttaatct cagtgctcgt   960

tacttcatgg tcccaagatg gctgctgtat ccccaagaat catgtctgcg ttcaaggaag  1020

gaggggtgga ggaagaggaa gggccaaact agctggaccc gtcaccttct atcagaaagt  1080

aaaacctcgt cagaagtctg tttcctgctc tctccctctg catatcttca cttagatgcc  1140

cttggcccga gccagctacc attgcacctc tagctgcaaa caaagctaag acagcaggga  1200

acagaattgt catggctgaa tagaccaatc gtgttccatc tactgagact ggcacactgc  1260

ctcctgcaat aaaactggga tcccattacc aagagagaaa tgcagaattg tgtaccagtt  1320

agcttttgct gtgtaacaaa ccatccccaa acttggcagc tagaaacaaa ccctgtattt  1380

tcccacaatc ctatgggttg gcaatttggg ctgggcccaa cagggcagtt ctgctgctca  1440

cacctgggat ccctcatgga gctaaggtca gctgttacct cagctgggcc tggatggtct  1500

aggatagcct tactcacttg cctggcaggt gacaggctgt tggctggaat tgcttggttc  1560

tcctccatgt ggcctctcca gcaggctagc tcaggcttat tcacatgatg gcttcaggat  1620

tccaaagaga gtgagagtag aagctgaaag acttcttgag ttcttggcct ggaactggga  1680
```

ctaggacagt gtcacttctg ctaagttctt ttggtcagag caaatcacaa ggctttaccc 1740

agattcaagg gatgagaaac agactacatg tcttgatgag gggaaccaca aagagcttgt 1800

ggccattttt cacctatcac aaataatttt ggatgggtat ttatttggat aaaggtattt 1860

ccctcttccc cctttctctc tgtctcatgg ggcctcactc tgccaagttg gaaggcacta 1920

agacattgtc ctggccctca gggtctaggg gaagaggtgt tggggcagga agtgagtctc 1980

tccatgggct ggacccactg tagtaggagt gcctccttgt ctgcactgct ggtatggggt 2040

taggccaggt aggacattcc agaggggctt ctgaaaacca agagtccctg gggaaaggga 2100

acagagtaag gcaggccttg ttctcactgc cctctaaggg aacttggtca ctcggcactt 2160

ttaagcctca gtttctccag ttcaataata aggacaagag cttttcccat gcattctctt 2220

tccccgggaa agttgactga ggtgaccagt aatagaattg aaaagggaga gtgtcttcag 2280

tgcaatgtgg catcctggat tgggtcttgg aacaaaaaca ggacattagt gggaaaattg 2340

gaaatctgaa aaaagtctga attttagtta atataccaat ttcagtctct tggttttgac 2400

agatgtacca tggtgatgta agatgttgac cttggggtag gctgggtgaa gggtatacag 2460

gaactctttg tactatctct gcaacttctc tgtaaatcta gtatcattcc aaaataaaag 2520

tttttttttt tt 2532

<210> 788

<211> 3534

<212> DNA

<213> Homo sapiens

<400> 788

gttctaataa tcaccataat aataggcgct gggtgtacag aggggaccca ggcgacgctg 60

gcctccatcc gataaccacc gtaacagggg ctgggccgcg ccgctcctcc gctctaagtg 120

ctctttacat gcttcttaag ttaccggcag gccagccgcc cttacgagag cccctcacgg 180

acattaaccc aattgagaag actgaaccca gcatacgaac gttaagttgt cccaaatcgc 240

agggctggcg agtgaggagc ctgaattgga acccaggagc ttctggaacc cgctccagaa 300

ttgcgctctc gaccggtttg tccgctgaga gcgaacgggt gcgcgagcgc cgcatccctg 360

```
cccaaggcca tcaggcaggc agcgctgggg cccgggaccc gcgcggagac tccaccccgg   420

gatccgggaa ggctcccccg agccggggtc ggagctgcgg ctggaggggc ctcggcttga   480

ggaggatctg ggagggcggg ggctcagtcc tggccaccag gtgtgagggg tcgggtgcgg   540

agccctgtgt cagacgcggc ggtgaaggct gtagccctgc tctccgggat ggggggtggta  600

ctcttaccgc accctgcccc aagccgcagg gagcccctgg cgcccctggc gcccgggacc   660

cgccctggct ggagccctgc ggtttccggg agctcacggt cggctctgcg cccctccacc   720

gccgggcctg ggcctgggcc agggactggc tggggcggga ctgcggcctc ggggcgctgg   780

gtccctgccc ctgccgtgca ctgcgcggct ccccgcgccg cagctgggca ccagcagcac   840

cacggaccgc ccctgtgctc gcccgacggc gccccgcggc gctttaagag acggcctggc   900

agcccagccc cagccgccca gaccggcgag accagcctgc gggagcagcc ccatggcggg   960

ccaccagctg tgccattcgt ggtgcccсca acccttcaag gccgagattg ggtgcccctg  1020

cacagtggag agtgggccga tgccccatgg gacccctgcc cggcatcaga gctgctgcct  1080

cacacctcca gcggcggcct tggagatgca tgtatggtgg gggccatcaa cccagagctg  1140

tacaagttcc cagaggacaa aagtgagacc gacttccccg acggctgcct ggggcggctg  1200

tggttctcgg tggaatatga gcaggaggct gagcggctgc tggtgggctt gatcaaggca  1260

cagcacctgc aagccccctc ggagacctgc agccccctgg tgaagctcta cctgctgccc  1320

gatgagcggc gcttcctcca atccaagacc aaacgcaaaa cctccaaccc gcagtttgac  1380

gagcacttca tctttcaggt gtccagcaag accatcaccc agagggtgct gaagttctcc  1440

gtctaccacg tggacaggca gaggaagcac cagctcctgg gccaggtgct cttccccttg  1500

aagaatgaga ccctagtggg ggactgccgg cgtgtcatct ggagagacct ggaggctgag  1560

agcctggagc ccccctcgga gtttggcgac ctccagttct gcctcagcta caacgactac  1620

ctgagccgcc tgacggtggt tgtgctgcgt gccaagggcc tccggctcca ggacgacaga  1680

ggcattgtca gtgtgtttgt caaagtgtct ctgatgaacc acaacaagtt tgtcaagtgc  1740

aagaagactt cagctgtgct gggctccatc aaccctgtgt acaatgagac cttcagcttc  1800

aaggccgatg ccaccgagct ggataccgct agcctcagcc tgactgtggt gcagaacatg  1860

gaaggggaca gagccagca gctgggccga gtggtggtgg cccctacat gtacacccgc     1920

ggcagagagc tggagcactg ggacgagatg ctcagcaagc ccaaggagct ggtgaagcgc  1980

tggcatgcgc tctgccgcac cacggagccc tgacccctttg cccagcaccg cggttccgct  2040

ttgggagccg accatcctcg cagttgcatg tgacagccac agccacacgc atggacgttt  2100
```

catccaacag ctccccgagc tgccagccag cccgagccag gaggacgtga gtgctgatat 2160

gcaggagaga agaggggaca aagaagccct ggcccggtca gcggctctgg ccatacagcc 2220

ttccgacaca ctccctcctc cttatctgcg gggctgcctg ggctcggaat cccggctcct 2280

ggtcctcaca gccctgattt ggaccagaat ctcagatgct cagaagaaat atcctgttta 2340

gtgatgaccc agctctacct gctgaatgga cctgcagggt aaacttgggt gcctccatct 2400

gggaaagctg atgatgtgtt catgcagtcg atgaccctca ctgctttttc agccagggtt 2460

tctctgcctt ctgcctggca gagaaaacac actgctatgg ggaaaatcac agggagggcg 2520

ctgtgaccag cgcactcagg caccaagtgt cggcatggct cactgtgctg ggtgaaggcc 2580

tccccgagca ttaggtcctc cacggggctg tgtcaaatgc cctcccacat tgtgtcaagt 2640

ctgcccatgg cccaccctcc ccacagtcca aaaccacaca gccctggttc tccagctgtt 2700

ctgctgctgt ttctgtgctc tccctgatta agagcattca gttcctgggc tctccctttg 2760

agcaggaaat ggtgaaagca tgtggctatg gtatagccca cagggctgag attgctgtgt 2820

tgcagtattg atgtaaaatt tgttaagaag gaagtaccca cagatcactg ccatcaactc 2880

cccagaagtt gcactcaagc tagtgagcag cccttgtgct tgtcacagtt actgtaacag 2940

gtagtgtgta tttgcacctg gcatcgtgca gcctgcacgt caacacgttg ttttgtgtaa 3000

ctagaacagc acatggaacc actatctctt tctctttttt ccttcttttt cttttttttt 3060

ttattttaat tttttgagac agagtttccc tcttgtcacc caggctggag tgcaatggcg 3120

tgatctcggc tcactgcacc ctccacctcc caggtttaag cgattctcct gcctcagcct 3180

cccaagtagc tgggattact ggcgcccgcc accatgcctg gctaattttt tttattttta 3240

gtagagacgg aatttttacca tgttggctag gctggtctca aattcctggc ctcaggtgat 3300

ccacctgcct cagcctccca aagtgctggg attacaggca tgagtcaccg cacccagccc 3360

gaccagtatc tttttcttat gcagtgaaac aactttagca aaagaggcaa tgaatgttat 3420

actgagtttc tacctcttta actccacctc caatttctgt caatctacaa acacaagtgt 3480

cgcctcgcag tgtttcgtat gaacagaata tcttgtgttt gctttttgtc actt 3534

<210> 789

<211> 3186

<212> DNA

<213> Homo sapiens

<400> 789

atccccgggg	atgatcgagt	tcatcaaagt	ggaaaactta	aggcggtctt	cgtcgggctg	60
atacttcctg	ctttattgaa	tgttgatatt	aaatgcttac	ctccggaatt	atttttttgag	120
gtatcgactt	tagattaaaa	gcctaacaat	tcttaccttt	cccgtgggct	gcctggctcc	180
ccgcgcggtt	caacgcgagc	agcgccagtg	aggggacctg	tcgcgtgtcc	tgctcagcgc	240
ggtgtcccac	gggcgcgtcc	acagcccggg	gcgtccaggg	gctacagcgg	tgcgagctgc	300
tctagagacg	gagggcccgg	ccggagacca	ggggccggcg	gtttcatcct	gcgctgaccc	360
ttgccaacga	cgtggctggt	cctggggatc	acagggcttc	gctcatccca	tcttcctcca	420
tatccccaag	gtggaaacaa	gggggcgaga	tgtccacaaa	ctgaggaaca	gacaaaatgc	480
tggctgtcca	tgcagtggag	tgtgagtcag	tcatcaagaa	gagtgaagtt	cagacccatg	540
ccacaacatg	ggtgaacctt	ggaaacatac	taagtaaagc	aagccaatcg	caaaaggaca	600
aaacctgtgc	gactccatgc	tatggaccga	gttctgtccc	cctaacattt	gtatgtgaag	660
ccttaatccc	caatgtgact	gtgtttgcag	aaagggcctt	tagagaagta	attaaggtta	720
aatgagatta	taagggtggg	gtcctgatct	gataggatta	gtgtccttgg	aagaggtacc	780
acaggcctgg	cactgtggct	cacacctgta	atcctagcac	tttgggagtc	caaggtggga	840
ggaccacctc	ctccaggagt	ttgagaccag	cctgggcaac	agagcaagac	ccctgtctct	900
acaaaaaaat	taacagggca	ccgtggtgcg	tgcctgtagt	cccagcaact	tgttatggtt	960
acgtaagagg	aatgtgaatt	caaccctggt	gattttgggt	cgtgtcagga	gcagccctgc	1020
gacaccagtt	ggcaccttct	gcagactcta	tgtgtcgata	agacaaggtc	ccacccagca	1080
agtgcccttt	tctcagctga	tgaacataag	cctgcatgga	cgttactgtc	catggaaagg	1140
agcggccggc	accggctgtg	acagacacgt	gcctgtctgc	gatctgagtt	tcatgaacag	1200
taaactctgt	tggtcacagc	ctctttggaa	aacaatgtta	gttaaaagaa	gtgccctgtg	1260
accagcagtg	ccaccctcga	cagggttctc	caagtgggac	ccgggcaagc	agcctcagta	1320
tcactagggg	ttgttagcaa	tgtgccttcc	tgggctctgc	cccagagtgg	ccgcaccagt	1380
gactgggagt	gaggtcccag	ggccctgtgg	tccatgaaga	gctctcaggg	gattctgatg	1440
cccagtggta	caggtgggcc	accggactgg	ggtgtcatct	gcccgtgggc	acgagacatg	1500
aacaaggaca	tagcaggtct	gttagtagtc	ataactaaaa	gaacaaagga	gccgggcgcg	1560

```
gtggctcatg cctgtggtcc cagggtgttg ggattgcagg cgtgagccac tgcgcccggt  1620

ccacgtttct atcaaattga aatcatgagc ggttttgctg agggtgtggg gcacccagag  1680

cctgcggcct gtgctcgagt gaaaatggtg gccccgctcc agaagcctgc gacggcgctc  1740

acggaaccgc agccttcgtg cggcggcacc tgggccgtgc tactcctctg tgacttcccg  1800

gaagagatga gctgctacgt ccagcaaaag gcacatccaa gatcgttcac cccagcatga  1860

ctcgttacac tccggactag aaggaacccc aaggtgcttc agtgacagaa cgatgaacca  1920

gctggggtgt aaccccatg caatggaata tcgtacagga acgaaaagga cacgctaccc  1980

ctacaagcaa catggatctc agaggcagga tgttgcgcag aagaaaccag acacaaatgc  2040

ttcggctcgt gttgctgcga ctcattacag gcagccgaat ctgcggtgat ggggggcccca  2100

ggagcagtga ccaggaggca gtgccacgga gcctgcggtg ggggctgata gtcagtagcg  2160

tgacctggtt gggatgttct gtttttaagc tggagtccat catgtttgtt tatttgttca  2220

tttcgtagag gtgggggtct tgtagaggtg ggggtctcgc tctgttgccc gggctggtct  2280

caaactctgg gcctcgggcg atcctcccgc cttggccttc cagggtgctg ggattgcagg  2340

tgtgagccac tgcataaggc cgttattgtt attagtgctt aaaaatattt agtaaacatt  2400

ttatttagcc taaaaaccat tcagagagca gaggctggac ggaacaaggc gtgccaggcg  2460

gtgagagcac agaccctcct cttccagagc aggaagtggg taaatgactt ttaagcctca  2520

tttctggggt ggcaaaactc ttctgtatga agaagtacaa atatgtaatg tcccataatg  2580

gcagctatgg gacgttacgt atttgccaaa acccacataa cgcacaacgc caagagtgaa  2640

ctgtaatgta aactgtggac ttaagtcaat gatcgtgtcc cgatacgggc tggttggttg  2700

tgatgcaggg caggtgaggc ccaaagtgga gcttagcctg ccagcgttct tggctttgcc  2760

caagaaagaa ttcaaggaca agccggaggt agaagagaac aacttgattg aagaggcagt  2820

gtggcagacc tcactgaaga tcccccctacc ccaggctcaa gtcagagaga gaggaggtgg  2880

cagtgccgga atttcagctg cgcatccgtc ccagctctgc actgcgggcg tccgtcccag  2940

ctctgcactg cgtgcgtccc gccctggctg gagcttgcag acggcagccc tgcaggaacc  3000

caccgggggct gactccttcc tccccagatc ccacaaaaca gcagtggatc tccactcggc  3060

acgcattccc ctctacattc acacgaagtg tcttttaatg gaaagtgtat aaactcgtta  3120

attttggtta ctgcactgaa gttaggcaag cttctgcagc tttattaaat gaccaatgct  3180

gtccct                                                              3186
```

<210> 790

<211> 2504

<212> DNA

<213> Homo sapiens

<400> 790

agtcctcagg	gtccctaacg	tactggacag	agctaggaaa	gcaaacccat	ttgcttcttc	60
ctgcaggaaa	ccccttgagg	ttaagacccc	acaatcacat	gaggatggag	tggctcaccc	120
tcagtcaaca	ggccagactc	aaggggttcc	tggcaagtca	tttctccctc	gggccttcgg	180
tttcctcacc	tacaagatga	gagggctgga	ccagatggaa	attcaggggg	taaggggatg	240
tcctcacgca	gcccacccccc	acccccacgg	gaccctggag	cctccatccc	agttcccacc	300
acgcacccgc	tccacaaatc	ctgcccaagg	gtctctcatc	caatgacctc	aactgctgga	360
agaagccaca	agagggaatg	cctttcatct	gtgatctcac	ataccagcct	gtcctttcca	420
ttgagaggaa	agctgagctc	cactgaagca	acagaggccc	aaggagaaac	cttaactgtg	480
tgcctttggg	ggaaagcgtg	gccccaggaa	gggcttccgt	gctggccact	gcagtggggt	540
tgacagagct	ggtaagccac	aaggggggccc	cacccaaaga	caaggggggac	atttattcct	600
gggaacaaca	aaacctgatg	aggccgagta	catgacaatg	aagactgtag	agcttttccg	660
ttctctataa	aaaggcaagg	ggtttctaga	cagggaagaa	aaagaattta	cagagcagtc	720
tttgtgtact	aacatacagc	ctgcatctct	tttctttaaa	atttcttgga	agagaatgag	780
tcatctcaac	attgcaggaa	accaaataga	agttgggggga	aaaaattact	ttggacaaag	840
tttttctctt	aaatgtttgc	atagtaatct	ttgcctggaa	aaaaaaaaag	atgcctaaat	900
ttagaataga	gatgtggtac	agttaacaat	tctggttcta	tcggatggga	agtgtgatgg	960
tgtgctcagg	ctgggatctc	ttattttgaa	actcaccaca	accatttggc	cagagtgctt	1020
cactggcctc	cactctgact	gctgccgagg	ggctgatcag	aagacaatga	gattgcaaca	1080
gcttctacca	gttgtatgct	gacaaaatgg	gtaggaaagc	ttccttttc	caacagataa	1140
cagcattgga	aacagaactg	aaatgcactg	tgtcatctca	tctccccaag	acaagactgt	1200
aatgttccaa	agcctccttg	ctcacagaaa	ggatgtaaca	gcagatatgt	acggaaacat	1260
aaggatccta	ggcatccggg	atgcctggcc	actggtctgg	tcactcttcc	ttagacctct	1320

ttaaatcagt acatttcctg agcttggatg ggtttgtcta ttagtgtttc ccaaagaaca 1380

ccaattatga aagaggtttc agacctgttc tcaataggga ggttacttgt taccgattct 1440

ctagttattt agatcagcac tcatgtgctt tccaagttgg gggtgggact gttgttaatt 1500

ggttatctac atttcaaagc tgtatttttt gacaggcaca aaagtacccc ctatttgtaa 1560

gaaagaagaa taaaaagagg aaggcatgtc tctgccatgt ggcgagagct catttcagcc 1620

ccatcccaag gctgagcctg tcagcaggta ggaacagtag ggccatttag ttctctgcca 1680

tttagcctgt gtcagcagtt ttccaaaaaa gaatccagtt ttcaagggca catatctccc 1740

caacaaccac tactatcccc tccccacccct aaagattgtt cagagaccaa ctgttaaaaa 1800

aaaatccagt ttaaaactga atttatgtta cagatttcag aggaaaggaa catgaccctg 1860

tattaagctc tggcagcaga agcaccacca tacataaggt ggtggtttca ggggcattca 1920

ctaaccactt caaagaggcc acatttcagg agctggcact ttgcctgaaa tgcttttggt 1980

ggggaggaga gggctaaaag gaatgactgt ttggtagcag ggccagtgct aggtgatggt 2040

gggcactgtg tctggtcctc tctctcagct aacttgggcc accaaaatag gtggtacagt 2100

gtgaggctgt atgccgaggc tctgggggtt caggggggtga tgatccagca ggtcagagct 2160

cagaaatgac ttctagattt cccctccacc atactacctg catatatgca agcagggctc 2220

tttctattca gcattcattc atcggtgagg ataccatgag acggctctga gaaagactga 2280

actccagtta ggaccttaaa ctatgagaag cccaaggatg tataaaacac aaatatactt 2340

aattgcaaaa cttttataga gaggtaggct aggagatacc acaacaggga caccagaggt 2400

gcttttgcct tctgaagata ggtagactag gatgttcaaa aaatacattt ttgattgcaa 2460

tacagcataa taggtgtcta taataaaagt acttatgtgt ccgg 2504

<210> 791

<211> 2386

<212> DNA

<213> Homo sapiens

<400> 791

agttcggcca cgtccctggc cacgtcgcgg gcgatctcgc catcttcgcc gcttcctctc 60

aggggccgcc gcctcctgag ccgcccagcc ccggggcccg ccgcgctgcg ccgaccgcca   120

ccgccgccgc cgccatgaac attttccggc tgactgggga cctgtcccac ctggcggcca   180

tcgtcatcct gctgctgaag atctggaaga cgcgctcctg cgccggtgga ttggcattct   240

gacgttgtat ctcatgcaca gaggaaagct ggactgtgct ggtggagcct tgctcagcag   300

ttacttgatc gtcctcatga ttctcctggc agttgtcata tgtactgtgt cagccatcat   360

gtgtgtcagc atgagaggaa cgatttgtaa ccctggaccg cggaagtcta tgtctaagct   420

gctttacatc cgcctggtgc tgtttttttcc agagatggtc tgggcctctc tgggggctgc   480

ctgggtggca gatggtgttc agtgcgacag gacagttgta aacggcatca tcgcaaccgt   540

cgtggtcagt tggatcatca tcgctgccac agtggtttcc attatcattg tctttgaccc   600

tcttggggggg aaaatggctc catattcctc tgccggcccc agccacctgg atagtcatga   660

ttcaagccag ttacttaatg gcctcaagac agcagctaca agcgtgtggg aaaccagaat   720

caagctcttg tgctgttgca ttgggaaaga cgaccatact cgggttgctt tttcgagtac   780

ggcagagctt ttctcaacct acttttcaga cacagatctg gtgcccagcg acattgcggc   840

gggcctcgcc ctgcttcatc agcaacagga caatatcagg aacaaccaag agcctgccca   900

ggtggtctgc catgccccag ggagctccca ggaagctgat ctggatgcag aattagaaaa   960

ctgccatcat tacatgcagt ttgcagcagc ggcctatggg tggcccctct acatctacag   1020

aaaccccctc acggggctgt gcaggattgg tggtgactgt tgcagaagca gaaccacaga   1080

ctatgacttg gtcggaggcg atcagctcaa ctgtcacttc ggctccatcc tgcacaccac   1140

agggctgcag tacagggact tcatccacgt cagcttccat gacaaggttt acgagctgcc   1200

gttttttagtg gctctggatc acaggaaaga gtctgttgtg gtcgctgtga gggggaccat   1260

gtctctgcag gatgtcctta cggacctgtc agcggagagt gaggtgctgg acgtggagtg   1320

tgaggtgcag gaccgcctgg cacacaaggg tatttctcaa gctgccagat acgtttacca   1380

acgactcatc aacgacggga tttttgagcca agccttcagc attgctcctg agtaccggct   1440

ggtcatagtg ggccacagcc tcgggggcgg ggcggccgcc ctgctggcca ccatgctcag   1500

agccgcctac ccgcaggtca ggtgctacgc cttctcccca ccccgggggc tgtggagcaa   1560

agctctgcag gaatattctc agagcttcat cgtgtcactc gtcctggggga aggatgtgat   1620

tcccaggctc agtgtgacca acttggaaga tctgaagaga agaatcttgc gagtggtcgc   1680

gcactgcaat aaacccaagt acaagatctt gctgcacggt ttgtggtacg aactgtttgg   1740

aggcaacccc aacaacttgc ccacggagct ggacggggggc gaccaggaag tcctgacaca   1800

gcctcttctg ggggagcaga gcctactgac gcgctggtcc ccggcctaca gcttctccag   1860

cgactcccca ctggactctt ctcccaagta cccccctctc taccctcccg gcaggatcat   1920

ccacctgcag gaggagggcg cctcggggcg gtttggctgc tgctctgctg ctcactatag   1980

cgccaagtgg tcacacgaag cggaattcag caaaatactc ataggtccga agatgctcac   2040

cgaccacatg ccagacatcc tgatgcgggc cttggacagc gtggtctccg acagagcggc   2100

ctgcgtctcc tgtccagcac aaggggtctc cagtgtggac gtggcctgac cagggccact   2160

ggaaactgtc ccaggaacga tggactcacg cttttgtcct taaactgact taccatccga   2220

ggagttccca tgacgccaaa acagcgaatg tccatcaaca ggaatcggat gggaacagaa   2280

ttccatggtc tcaatgactt aagtttatgg gaagtcattg tggccataat ggtagcagaa   2340

gtagcgagca cgctcaggtg ataggacgac tcctgagacc cagcga   2386

<210> 792

<211> 2656

<212> DNA

<213> Homo sapiens

<400> 792

taattgtgca ggctgaacct tactccatgg ttttgtggtc tccaggtgtg aaaaaatcaa   60

ttattcttag caaagtaggt cagagaaatg ggagaaaagg acgggaaatg aatgagagca   120

tgcaagagtc ttgcttctat tttttgatc accaattctc tggctttttt cttcctcata   180

tcttacctcc cttggttagg aacacaatcc acacttggtt tcactgtgga gaagactcaa   240

gagaagggaa aacatatttt ggctactgtt tgtcaagtta ttcagtattg aatatactta   300

acatataccc aaactgcaga tcacaaaaaa cacaaacaag caacaataaa aaacaccaac   360

aaatatctgt aaaaacaagc aagtgctagt acaaagaaaa gtgatataaa tcgagaggga   420

aaatgatcct gctttctcta cttggcttgt gttcaccaaa ctctgtcttt gctgactctg   480

aagcttcttt cattttaagc ttataattct tataggttta gtccaagtat gcaattaccc   540

ttggctgtga gaggtggctg agcagttaga caaatgctac taaataggat gaaaggtgaa   600

cttgcactta aaaagttagg ttggaatcta aagcatacaa ttcagtcttc tgggaggtta   660

```
tagtatggta ctaatgaata tattttggga aataaatttg atgcaagttt taaataaacc   720

agacttgact tctataataa atttagaaac tcttttacca aaggtcctca ttgcaggttt   780

tggggataaa gggtagagtg ctataaatct attatttaaa gaaaactaaa atgaattcta   840

gatgtttctg attaacagta agcctctatt ttccctgcat aacatatttg acccttggcc   900

catcagaacc gtagctgcac tgatgtatta gagaccatta cacacgtgaa tttacttggt   960

ttagcaggaa gcctatatga ctgtttaaat atttgctata ttgttgtacc aaaatacaat  1020

tctgtgtcta ctgctcattg tagtctatcc aaaggcaact gggcagcagt attctgaaat  1080

acgtacacca aaaatacacc acgtacaatt catcaagtta acataaccca atgataatct  1140

gtgtgtgtgt gtgtgtgtgt gcatgtgtgt gtttgtattt cctgctaata gtatgcagtt  1200

tgcttcccta aacatcaaag atcttcagaa agaatattct ctaacatctt tttctatctt  1260

ttctattcag gaattttact cttccatatc tggccatgac cttagtctcg aacactcttt  1320

tgaaagtgta cagatgtcta tgcaaaacaa tagaaggata tggtgtagct cacacacata  1380

ggctctgata tagctttaat aatttcccct catatttcaa atattctgaa atcatgtatc  1440

atcttttta aagactgaaa taggttattt gcatatggaa gagtgataaa tttttttttg  1500

ataaagaaaa tgtggctagt tcataattgc ttttaggcct tataatcaaa aaattaaaaa  1560

ttaggatatt gtttgagacc cgtttactat gaaataaaat tctaaatata gatgtgctgg  1620

gggtaaaaaa tcttgacaat gtaagggcta tttacatggc agaaagaaaa ggaagaaggt  1680

atatcaagaa tagcctgcac tgaaacatga aaacatatta agtagagggc cccagagtat  1740

ccaacgtttt taaggtaaag attgatcaag gtgaaaaaaa caaaacaaaa ctcagtctct  1800

tatctttttg ggataatctt caagatattt agataaagta gaagagttag atgagtgctt  1860

acaaatacaa tgtggcactc taaagcaata taattttaaa atattgtgtt caactactta  1920

tttgttgttt cagcttgttt taataagaat cttgaaaata atgatagcat taactatcac  1980

agacatagca tgtgaatgct gggtaagcag tcatactctg ctaagaagct gtctgtttct  2040

cttaaatata gtagcacaga atcaaatatc ttataaaact tatcctgaaa ttacatatgc  2100

atcattatat ttgattagaa tgtattctgt acaacagcta cttctgataa aaatgaatct  2160

aaaaagttac cttccaaaaa tcaaggtccc tgcgattctt tctcttcttt tgcaagaaga  2220

aatgtgaatt cctaaaagct ctgtatatat tagataggaa gcagctggga caccactgtc  2280

ttctcatgct ccatcgggat acagaacaag atacatctgg ctgtatgaga gaaaaaagaa  2340

atcttctaga attaatgtag cacactgtca attaggatcc aaatttagat actgaatgaa  2400
```

```
gccttctcaa aacacatacc agttcacatc cttctgtttc ttaaactgct gccaacagaa   2460

ctttcgaaat ttcaaccttg agaaaactat ataaattgta tgtaaaatta tataattaaa   2520

ttttataata tgtttagcag gaaaatgtaa aactgctgtt cattttttgt tttgcccagg   2580

attaagaaaa aagaaaaata gagaggaact tgctgcaagg cagacaataa atgaagctat   2640

tttaatgaaa gcacat                                                   2656
```

<210> 793

<211> 2368

<212> DNA

<213> Homo sapiens

<400> 793

```
tttaaggtat tttgaggcct gagtggtcca gagtattgtt tcataatccc aagtctcttt     60

ccttgggaaa tcataagttc atggtattgt gggatgtgga taaaaacctc atccttgccc    120

ttgagtatct gtcagtctgt ttgggggaga ttggatgcat atatgcaaag gactaggaag    180

aaaagtctga gtttagctcc tttgggacag aggatgcaga cggttatcca tctattcatc    240

catctattca tccatctatt catccatcca tccatccatc catccatcca tccatccttc    300

catccatcca ttcatttatc caaccagcca attaaccaac caaccaacca accaaccaac    360

caaccaacca accaaccaac caaccaacca tctaaccacc caaccaccca catacccaac    420

caatgaaaca accaactaac caatattcaa cacctctcat gcgctaaact cacaatccag    480

tgagcaagat aatgacagtc cctgtcttca taagtcctat gggctccagg gcaagtcaga    540

gtcctctgat aaacttacct attattctta ccatcacagc ttagatttga gcacttttac    600

ctcaaacact gtactaaagg ttatactctt attatatcat tgacttctct taatttctcc    660

tacctgcaag aagtaattgc attgtatagt tattcacata acacatgtga agaaatgagt    720

tcaaagaggt taagagatta atcttaccca aagtcctgta gatagagagt ggcagcttca    780

ggacaccagt ccaagcctta tctatattgc aagtattgca taaaacctca gctgaaattt    840

tgataaattt tatggaactt aagctagata gatcttgttc acctgaacat cctgtctggg    900

atgcatggta gtagactgaa cagctccact gcttatgaaa tgtgtgacct caggcaagtt    960
```

```
gttaagctct tggtgcttca tgtttatcat tggcaaatgg agatgataat agtacttatc 1020

tcatgggatt gttgtgtgga tcaaatgtgt gaatatatgt aaagtgcctg gcccatgtta 1080

tataagtgtt ggctattatt gttattgtgt tgacagacat ttcagaagag tacttgtttg 1140

ggcgaagaag ttaatgaaca cttctttgtt gaacctgtgg ggttaaggca tgcttagagg 1200

aatgtaatct gggctagatg cttggctatt caagtgagca tgtgacagtg atggtctcag 1260

tctgcctccc ttgtcagagc atcatctgta aatgattgcc tccatcactt accaagcaca 1320

gtcacaggaa gttgtgacct cccttattg gaactgtcat tttgaaccta tgtttagtct 1380

ggcagacgtt ttgacctccg tgatatattg ctgagggtgt tttgactcca tgcttataac 1440

tacaacatta aaaacaccaa taatggctga attttatca agaaagtatt ttcttaatta 1500

atgcttactc aatcattttt actccaagat aaatgttcaa tacagagcag ttaaacaatt 1560

tctacctttt tccatcttct attttatcaa aatcatttta tggagatgaa ttcttttgca 1620

tttggaattt tacaatgatg gcttataatt tattgacaat aatttattta ggtcaaattt 1680

tagcttctgc cactgaattt tccatcgtag ttttatttct actaagtcaa attttcctgg 1740

tttaaatttg attgatttga attttattgg gataatttga ttcccctgtg aatgtttgct 1800

cattaacaca ttctttgtgt aggttagctg ttgtcagttt tattttgaac tgattatttc 1860

aatcgaaacg gtgagggaca aatgcctaat caccttaagc gtctatggaa gccaggagtg 1920

aggccaggta aaggcagccc agaccagatc taaatgaaac gctgtgggct aagttttcat 1980

tcacagaaga tgggcagagt ggcagatcag aggtaactat caatgataca aacttcaagg 2040

aaatgatgag atacagagga ccaaagttaa agtcaatgat atatgtgaag catgatgatt 2100

ttccaagcca tacccaaacc ctatgagctg tgcatgttat acccagcagt ttaatcctgg 2160

aagactcttg gtgcatgttg cagggatgag ttagctcagt gtgatgtagt aaagagcag 2220

tgggattggg gtcaggtgat ctggggtctg aacctagttc tgtcactcct tgtgtatact 2280

gggacaagtc catctcccac ctgaggtctc agttttacca actgtcaaaa gattgcccta 2340

aaagttcata gacccttcg aaaatctg                                      2368
```

<210> 794

<211> 3031

<212> DNA

<213> Homo sapiens

<400> 794

aaactaaagg cacacaggat gaacatggaa cgacatgaga tggacgcagg gcccggaagg   60

cttcccaagg gaggcgcaca gtggaaggca gaatgcaggt tggccctgtg gggtctcagc   120

tggaccccgc tttccctgac aggcctgggg aatggagctg cctccgccca cagcattgca   180

ccctccacct ggtgccctgg agttctgatg cctctctgcc ccctcatctc ttctgctgca   240

aagctagatc tggatcctgg gggttctgcc ccaggcccct cccagcatca cacatactgg   300

acacgcacac gcaatcacac agagtcactc acagtcacgt gcacactgtg gatggaagcc   360

cactgttccc ctgtgtcacc atggccactc tacaagcata gacatgcact ccccttcact   420

gtccctggct tattgcgctg ccccccctccc atttcctgtc cacctgtcag gccggggggcg   480

ggggagggg gaggcacagg agggaggtgt cagtgtccct ggagccgcag atggacattc   540

cttgctcggg tcagatcaca taagctgcct ccttccagga acctgagccg cctgtcctca   600

cgccttaccc aatgcctgag ggtgggacag ctgggctaag tgctcacggc agcaaaaaag   660

agtgcgggct agacagcaga aaggacttcc caagtgtgtg tgtatagggt tacccctgtc   720

ctggggttta gctctggctt actgtctgac cttgagaggt ccttatccct ctctgggcct   780

tcctattcca gagtgagggc agctgcttac catgtaaagg gcttcttaaa gggtctgcga   840

tggagatgct gggggctggc actaaggtga ggtacacaca aagggaacag cagcttcctt   900

tcaacaggca cttgtacaca cacacaatca tacatagaca tgcagattca cacacatccg   960

catagctgct cctacggatc cctggtcact cattcatgtc acatagagac atgcatgtag   1020

cacgtatacc cctgcatgca gacatctaca aacacagata cgcatacaaa cagctgccca   1080

gtgctgttcc tgtgtagcca ccaggcctgt cctcgtgtct ctgtctctac tgagggaagt   1140

ctggggtgtc tcttctctag gaagtgcacc cgatactcca gcagtcggag gacccattca   1200

agactcccct cgtctctgca gcacagtctt cctctgggag tggacacaaa gtggcaggag   1260

atgtggggct ggggccgatt cccccagaca tcacctccat cctgtgattg atgagttgag   1320

gcccgcagcc ccctgctccc cacggttcct gcctccattg agcaggtgga ggggggggttc   1380

cgtgtccgca cagcccttgt tttctttaa ttaaacatct ggctcttgtg gcctgggaag   1440

cctcagaccc tcgctgacag cctccccgcc acaactttgg catcaatgat gggttgaggg   1500

gggagagctg gggctctggg gcccacctgt ccccatacag tgcaggggac tgggagctcc   1560

aagaatgccc tgaccatact gtcctcaccc ccagtgccgc cgcgggagcc tgtgctcagc 1620

tgccgctcca acacttaccc caagggcttc tactgcagct ggcatctgcc cacccccacc 1680

tacattccca acaccttcaa tgtgactgtg ctgcatggct ccaaaattat ggtctgtgag 1740

aaggacccag ccctcaagaa ccgctgccac attcgctaca tgcacctgtt ctccaccatc 1800

aagtacaagg tctccataag tgtcagcaat gccctgggcc acaatgccac agctatcacc 1860

tttgacgagt tcaccattgt gaagcctgat cctccagaaa atgtggtagc ccggccagtg 1920

cccagcaacc ctcgccggct ggaggtgacg tggcagaccc cctcgacctg gcctgaccct 1980

gagtctttc ctctcaagtt ctttctgcgc taccgacccc tcatcctgga ccagtggcag 2040

catgtggagc tgtccgacgg cacagcacac accatcacag atgcctacgc cgggaaggag 2100

tacattatcc aggtggcagc caaggacaat gagattggga catggagtga ctggagcgta 2160

gccgcccacg ctacgccctg gactgaggaa ccgcgacacc tcaccacgga ggcccaggct 2220

gcggagacca cgaccagcac caccagctcc ctggcacccc cacctaccac gaagatctgt 2280

gaccctgggg agctgggcag cggcggggga ccctcggcac ccttcttggt cagcgtcccc 2340

atcactctgg ccctggctgc cgctgccgcc actgccagca gtctcttgat ctgagcccgg 2400

caccccatga ggacatgcag agcacctgca gaggagcagg aggccggagc tgagcctgca 2460

gaccccggtt tctattttgc acacgggcag gaggaccttt tgcattctct tcagacacaa 2520

tttgtggaga ccccggcggg cccgggcctg ccgcccccca gccctgccgc accaagctgg 2580

ccctccttcc tccctcaggg gaggtgggcc atgcagctaa cccacccacc aaagacccc 2640

tcaccctggc cccttgggct ggaccctcca atgccagcga ctcccaggag cccttggggg 2700

acgtgagggg agcctctcac atccgatttc tcctcctgcc ccagcctcct gtctatccca 2760

gggtctctgt tgccaccatc agattataag ctcctgatgc tggggggggcc cagccatccc 2820

cctccccca gcacccacaa ttttcagtcc cctcccctct gccctgtttt gtataccct 2880

cccctgaccc tgctcctatc ccacagtatt taatgccctg tcagtccctt ctagtctgac 2940

tcaatggtaa cttgctgtat ttgaattttt tatagatgta tatacagggt gggggggagtg 3000

ggcggttctc attaaacgtc accatttcat g 3031

<210> 795

<211> 3407

<212> DNA

<213> Homo sapiens

<400> 795

gcggcagcca	gcgagcgggg	agaaacagat	tcacacccag	gggcctccgg	gcagggccca	60
cgggactcag	gccgtgtccc	gcttggaatg	tggagcaggc	gcggcctcgg	cgtcagcaga	120
gctcccctgc	atctcctcct	gggggtgtgg	gggccgagtg	ggagaactgg	cggacagagg	180
aaaggggcct	cgctcgcaag	gcccgggcgg	ggaggcctgg	cctcctgctc	agtcggtgca	240
aatggaaaaa	gagacgttct	gtttctccgg	aaaaccctga	ctaatacagt	agaggatatc	300
cagattgaca	acttcaggag	aaagtctgat	ttaggagtcg	gaagcccaga	ttggaaaaac	360
ctcttgatag	atgtcactcg	ggaagaccat	gaaaacagcc	aaaataattc	aaagagaaga	420
tgcaaagtga	actgtgaaac	agaccaaaga	tgaatctctt	tggtaaatcc	cctgcctaaa	480
tcccctgcca	tggaatagct	gcctaaactt	gggcaaataa	cttgacattt	ctcagtttcc	540
acattccaaa	aatggatttt	tatgagaatt	aaatgttatg	atgcattcca	gctacctgtc	600
ctagaacctg	gcataagagc	tcagtacatg	ctggggaggg	ttatcatcat	cgtcatcatc	660
atcttattaa	cattcatgtt	gaagggatga	tgggctgctg	agaagttcat	gaagaaggtg	720
aaaaactatt	acagaggtgg	gaggaaaaag	agaggactat	cacagaagca	gaagagctga	780
gagtattgag	aaagggtgac	gggttagggg	gactagcaag	taccctctgg	cgttggcgat	840
attcagtttg	ttgaaggcct	tgatgaactt	taatgaagtg	gtgagagtta	aacaaagctg	900
agataggata	tgaatctcag	ggaggatatg	aggactcatt	gattaccatt	ccaagaaact	960
tgtctgaaaa	ggaaagaaga	gatggtggta	atcagagcag	agtggcagga	tgcagggagt	1020
ttttatttat	ttatttgttc	ttgttgctga	cgttgttttc	atactatttt	ttgtttgtta	1080
aagagggaga	gttgtgagta	taaaataacc	tataaatagg	gaaaaccagg	aacagattca	1140
tgtgaaagcc	cttgactgag	aacagaatta	attacccgtg	cagaggtagt	cttcaagcct	1200
tggcaggtaa	gcaactgtct	gagacacagc	tggctcggga	cagggccctt	tctttggctg	1260
gcaggcttga	ggcagcataa	tttggaagcg	gatatgagaa	agggcataat	aatgtgaaat	1320
ttgactgcct	agtgggggag	aaactttgaa	tattatgagg	cggttatgaa	agtatttcct	1380
tcttatggct	tcaatggcac	tgcctctgag	cattagtgtt	tgtcctcagg	aggtaagtgt	1440
ggggactgta	tcagcagtta	ctacctagat	aagcatggtg	tataggggta	acatggttta	1500

tagagcatgc aagccttcac ctctttgcta gatgagatat ggaacctaga ttcggagacc 1560

acgtgacccc tgaggcatgg ggaggtgggg tcagaaagcg ttactggcca tgatccagac 1620

ccaggcgtgg agaaacgacc tactggggtt ttcagggagc aggaaggtgg ggcaggtaca 1680

gagtatattc tgggggacag tttcataaaa agtgagtaga tctccacaac ttagtttcta 1740

gactaaatgg actaagcatg ttccgcccta ttcttcctac taacaataac aaaaagctct 1800

ggacaaaatt tataaagcaa cccacagaag actccgaagt tggaaaaaga aataaaaact 1860

ggcgatttcc tccatactca aggcatcatg tagcagggag tgccttgggt gttgtttatg 1920

tgtttgtttt cttttgttca ttaatttttt tctcccgtgt atggcagtgt gggctctagc 1980

aatgcctacc acccggaaac acagatgggt acaaatttaa aaaccccaag aaaactcttt 2040

ttagccaaat gaccagtgtt tccagcagag caaaaacatt ttgaccacat ctgccctttt 2100

gtgctggcta accccttccc ctgccaccat gtgctgctgg ggggacattg tggatgaagc 2160

ccactcattt attcctcctc ctgcagtaat gtgaccatac ccttcccact cctaactaga 2220

ggctgggggga ggactatgtg ggggagagaa ctggagaaag caattttcta aatttgtgta 2280

tgaaatcctg gttagaactc tgagtgcccc atgcacaaaa cagacaagaa acaacacagc 2340

aaaaagattc aagggtcaga aaaactgaac actggtctga aacactgccc gggtttcaga 2400

ttggcatcag ggtagcaccc aagtggggca gattgaaata gcactgtaaa ggctttgaaa 2460

atgaaatgac ttttgagcca cagctcacaa agtgaaccgg aacaagcatt ctgaacttaa 2520

acaggtcaag tgcctgctaa aatcaaagac tgaaatggga accagaataa tataacatac 2580

tactgaaaat gtctaggatg caatccaaaa tctcatcaca ctgaaaacca taaaaatctc 2640

aacttgaaag agaaaaggca attgtaagca ttgagattac acagatgttg aaactatcca 2700

gcaagaatca taaagcagct attatacaaa tgccctgatt ttaaagcaag tatgaatgct 2760

cgaaacaaat gacaaagtgg aaagtcacag cagagaaata gaaaatgtaa ggaagaacca 2820

aatggaaatt ttaaaactga aaaatacaat aaccagtttt taaaaattac tagattcaga 2880

gggaaagacc aacaactcag aaaaaatggg caaaggatat gaagagttta cggaaaagga 2940

aatgtagata actcttaccc atataaaaat atgttcagcc tcactcatat aagaaaaatc 3000

aaaattgaaa ttacactgag acactgcttt tcacctgtca gaatggcaaa actcaaagtg 3060

tgaatatacg ctatgagaat gtggaaaatt ctcatagatt gcttgtgggc atctagaaca 3120

atttggttga atcactaaaa tccacatgcc atttggccct gcaattctac ttttagaaat 3180

ttatcatata ggaaacctgc atatgagtga aatgacatac gtggagtgtt actcctggct 3240

gcattgttgg taatcacaaa gaactagaaa aaacttaatg tccatcaata agatgctgat 3300

taaattaatt attatacgtc atacaatgga aagttagaaa accgtaaaaa aatgaaaccc 3360

tctctataac ctgctaccat ataataaata aaaggacagg caatgat 3407

<210> 796

<211> 2719

<212> DNA

<213> Homo sapiens

<400> 796

tttccacagt acccacttat tcttgaaaga ctcacatgtc tttgcctttt cagatgatgg 60

gcaagcgatc tctgccactg gtcctctcag ctccaccatc tttgtccgtc cctttgtgct 120

tcctttgcag tacacacaag cctgttgtct aaacagaagc tcaaatgcac aatgaggtcc 180

cagcacccct tcttacagca tccccaatct ttatgaggaa ttctcttgaa gcccottatt 240

tggtttcagg ttggggatgg ggtagcagag agagggagaa aggatgggag ttaattacct 300

gtcttctgga acattctatc aaaagaccaa tggctccata tctcttgctc actcctgctc 360

ccagttcttt ccccacacag actgagagag gagaaggatc taaggtagtg ggccattata 420

gggcccgtgc cataattggg gcagaagttg gatccagctg tgagatgctg cgctggcccc 480

tgactgacac agagccttct ctagaacagg tagtaaacac aactcctttt tcctcacctg 540

aaggccagaa tttctgaata gggcagggag gggacaattg aaaacgcccc cctagtatcc 600

tattatggag catcagaggt atgcggggaa ggggacttca cagctgtcct catctgaata 660

tccaaacagt taatgaccta atggccattc atgacagaaa atctgattgc agcaaacagg 720

aagtctccct gctaatactc acccctgcct gttcttgacc ttaccttggt tactggtagt 780

caggcactat tccccttgca gtactgcctc attacttgga aggtgatttt tagccacacc 840

tttgcctgct tccctccagt taagcacaag cttacccccct actgccctgg gtgatagaaa 900

tgcaaagcaa gcctgttgac aatttctgaa gaccccaaga ggatgactat cagaatgagg 960

ccagttctaa ctgactgagt tttcattagt gaagatcatg aaatgcctgg cccatgaagg 1020

ctcgaggttt gcatctggtg tgagctcaca tgcgtggatg cagaagcttc ccaggtgctg 1080

```
tgggtgtctc ttggcggcat tttactttat aatgctcagt ttgggttcct cttctgctga  1140

acctaatttt ttcactccag gggtaaccac tttttccact ttcaaataat ggtgcaactt  1200

cagtgattta atttagagag gtgatgaagt gaccgttcaa gtgttcagca aatggataaa  1260

agcctttcac aaattcctca aaaataaaca ctctcatctt ctgaaaggtt tactaaatac  1320

acactgtaaa gaactagcca tcagcatata tacttcttgt tattcgatgg ttgcagtatt  1380

atgttttatt caagtttggt tacatggata tggaaaggta aagtctgacc cctgaagcaa  1440

agaagatggt cattctgcaa gtagggcagg gacagcagga acagagaaga gtctcaccat  1500

gtcttgacca tgaaggtctc aagatgtcta ggaatgcatt tctggggtg dataggttg    1560
```

tctacaaatg gtgcccccaa catcaggcca ggtcaggcca ggctaggagg tgaggggctc 1620

cagtaggtgg cctgctgagt tggagaaaca gttgggcgac ggagctgagt gagcttggtg 1680

aatcagcccc gagagagcct actagaaggc tggactctgt gcaacacaat atttctcttt 1740

attgtgtcct tagtgtttat tgtcctgtgg ttttccttta gagtttagca aagccattca 1800

gctcaccttg agctgtgcta aggtgaaaca tgaaaagctt catttgtgag atcattaaaa 1860

agggatgcag tgcattcctg gaggccagca tggaggaagc agtcataatt aaagtgagac 1920

aaaaacaaat gggaggagaa aaagtgtgga gggtgaaaat ttcactcctt catctatttc 1980

aacaactgtt tatacctctg ctcagcacta tactgagtac tagagctaca gcagcaaaca 2040

agaccatcaa agcttgttct agtggaggga cacagaaaag acaagcaaca taatacaaat 2100

aataattgta gctagttcta agtgcaataa agaaggaaga gaaagagagc caacgtggct 2160

ttcagtgtgc cccgtgtggt aggcaagggg gagagatgta ggtggggagg agagggagct 2220

gagctgcacc tgtgtcaggt aggaactgag gggtcctgct aaaatgtttg gattttgttc 2280

tgagtacagt ggaagatgct gatgaattgt aagcagggga gtgatgagat ccaatttaca 2340

ttttgaaaag aatcctccag ttgctgtatg gggaatggat tacaggaagc aagagtgaaa 2400

gcagacatac ctgttaggag gctactgtga ggatccaggc aaaagaatgt ggcagcttgg 2460

cctaggtgtc aacagtgaag atggggggaa tggggtgcaa tcagaatatg ttctgcaggt 2520

agggctgaaa gaacctgatg gtggcttgga tatggggata agagaaaaca aggaatcaat 2580

gatgacttct cgggttttat cttgaacaaa gacaggagtg attggtggtg atggttgtgc 2640

tatttaagga gaaagaagaa ggaaagaaag aaagaaagaa aagaaagaga gaaagaaaga 2700

aagaaagaaa gaaagaaag   2719

<210> 797

<211> 2538

<212> DNA

<213> Homo sapiens

<400> 797

```
tagtaagtgc tcaataaaga ttagctttta cttaaaattt tctttgttgt tttttctcct      60

acccattaga atgtaagttc cataaaggta agaaccttct gttcttgtcc accaaggcct     120

agaaaggtgg gacacagagt aggcacttaa atattgattg gctgaaaaca gaatgttatc     180

ccacccttca gggtcaaatg ccatgtcctc tcttcccagt ccggttctcc accgagggac     240

atgaggctgc tttcactatc cgcataagac acccgcccaa ccctcggctg tacccacctg     300

ggtctctacc ccagggaggt gaggctggta ggggcaggga catattagaa ccagccttgg     360

tggggagcaa gttgggagag ggcagtcctg ggaggggata tctacctgtt cccctctccc     420

aaccctcctt gtctgcaccc aaccctgtgc ccccaatctc agcccagtac aacatcagcg     480

ctctagtcac gattgccacc aagaccttcc tccgttatga tcggctacgg gctctcatca     540

ccagtatccg ccgcttctac ccaacggtta ccgtggtcat cgctgacgac agcgacaagc     600

cagagcgcgt tagtggcccc tacgtggaac actatctcat gcccttcggc aaggtgtgca     660

gctagcaggc tgaacggcag gccagaggac tcccgcaggg ggtgtgccct cgatctgcag     720

cctccagggt agtgattcga ggaccacctg cctcagaatc atggggtgcc tgttaagcat     780

gaggattcct ggaatgtaag cttcgtggga gcaggaaatt ctctctgaat tcttagaatg     840

gtgcttagtg cctaatggca ttcaataaaa tagctgatga atgaataaat aaatgcacac     900

ggaaattaaa cgcattctaa gaccactgac ttggaacctc tgtggggatc tgcatttctt     960

ttacctagct cctggccttt cgaaagcact caaaagtctg gagaagaata caagctgaga    1020

agggtcgggg gagagaaaga aaggtggcag agggccatgt cctatttctg cagcctcccc    1080

aaccacacac acctttctgc cagggctggt tcgcaggccg gaacctggcc gtgtctcaag    1140

taaccaccaa gtacgtgctg tgggtggacg acgacttcgt cttcacggcg cggacgcggc    1200

tggagaggct tgtggacgtg ctggagcgga cgccgctgga cctggtaggg caggggctgc    1260

aggatgtggg ggtggagaag ggccttgaac aggctaaggc cacagcgggg gcgctgcggc    1320
```

caggaacggc cagccctagg acaaagagag aaccacgaag tggggcctgg gaactgtctg 1380

ggtcctgcag gggtgaagcg gaagaggatg gggcaggggt accccgaag gcaccggagc 1440

gcagaccttg accccttcgg gtcccctatc ccaggcccgc ctggaggcaa cctccctctc 1500

cctgcaggtg ggggggcgcgg tgcgcgagat ctccggcttt gccaccactt atcggcagct 1560

gctgagcgtg gagcccggcg ccccaggcct cgggaactgc ctccggcaaa ggcgcggctt 1620

ccaccacgag ctcgtcggct tcccaggctg cgtggtcacc gacggcgtgg ttaacttctt 1680

cctggcgcgg actgacaagg tgcgcgaggt cggtttcgac ccccgcctca gccgcgtggc 1740

tcatctggaa ttcttcttgg atgggcttgg ttcccttcgg gttggctcct gctccgacgt 1800

cgtggtggat catgcatcca aactgaagct gccttggaca tcaagggatg ccggagcaga 1860

gacttacgcc cggtaccgtt acccaggatc actggacgag agccagatgg ccaaacaccg 1920

gctgctcttc ttcaaacacc ggctgcagtg catgacctcc cagtgatggc ccgctgggga 1980

tttctgactg tcaggctggg cctgcctcct tgtccctgcc aggaatttcc aacaaacccc 2040

accaccctgt gagcactcta ctggctgtcc ctgagcctct agttcctcac tcttcctttt 2100

cagaacctga tgcccagtag gggttgtcct ggtgacaccc ctccttttc cagtgcccag 2160

aggcctggtg gagccataac ctctcccaca gccagtgcca agtcctcccc ctgcccattc 2220

tcatggggca ggaaatgggg ggatcacttt ccaagtgcca aagagcccag agggactcta 2280

agaacctaag gtggaaacac tgtcctctca tcttgggacc gagggggtgg ggaagttccc 2340

caacacataa tcccaagact gtgcccctca tctgcatctt cagatccagt actctgtgta 2400

cctgctccag ccccaccccc acagagagaa cttgtggctc tggggctggg gtgagggctg 2460

gtggttggtg aaagccattc ttagttgtgt ctctgcaatg ctgtgggcac aaaggaaggg 2520

gcaccagagt ccctgtgc 2538

<210> 798

<211> 3868

<212> DNA

<213> Homo sapiens

<400> 798

```
tataaaataa cagtagatac caatgactta gaagaaaaaa aagccttgac atctctattt    60

cctcatctct aaaggtgata acacttgcac tatggtgatc ctactagtaa tacatttgga   120

gccacgttgt aaacttcaga gtttgcacca ttattattat ttttttatta ttattatttt   180

ttgagatgga gtttcgctct tgttgcccag gctggagtgc aatggcgcga tcttggctca   240

ctgcaacctc catctcccag gttcaaggat tctcctgccc cagcctccct aatagctggg   300

attacaggca tgtgccacca cgcccagcta attttgtatt tttagtagag acggggtttt   360

tccatgttgg tcagactgct tgtgaactcc cgacctcagg tgatatgctt gcctcggcct   420

tccaaagtgc tgggattaca ggcgtgaacc accatggatg gcctattatt attattatta   480

gagatggagt tttgctcttg ttgcccagtc tggagtgcaa tggtgcgatc tcagctcact   540

gcaaactcca cctcctggat ccaagcgatt ctcctgcctc agcctcctga gtagctggga   600

ttacaggtgt gcgccaccag gcctggctaa ttttgtattt ttagtagaga cggggtttca   660

ccatgttggt caggctggtc tcgaagtcct gatctcaggt gatccacccg ccttggcctc   720

ccaaagtgct gggattatag acctgagcca ctgtgcctgg ccaaagtttg caccattatt   780

attattatta tttttctttt gagatggagt tttgctcttg ttgcccaggc tggagtgcaa   840

tggcgtgatc tcggctcact gcagcctcca cctcccgggt tcaagcagtt ctcctgcctc   900

agcctcctga gtagctggga ttacaggcat gggccaccac gcctggctaa ttttgtattt   960

ttagtagaga cggggtttct ccatgttggt caggctagtc tcgaactccc gacttcaggt  1020

gatcctccta cctcagcctc gcaaagtgct gggattacag gcgtgagcca ccgcacctgg  1080

ccagtttgca ccattattat gggagcactt gcaaagcctg ccagttgatg gtagggtgga  1140

aaagaagagg acaactagaa gagagttcct acaccgcaaa gtaaactttg ctggctctgc  1200

gaggagcagg aaacctgcat gatgagaaca aggactgggt ggcactgcag gaaatgctca  1260

attcgagttt cacttcctgt gttatcactt tttctttgct gcaatttcat ctttgttggt  1320

caattctctt ttaattttcc attttttac attctatgta aatgtagttt ttatgaacta  1380

gagagtctga ctccatattt tatctttgac tactgtcagc tctcaagccc cacctcttcc  1440

ctccccttct gtcccacacc tggatggctg attcaaaagc ccaggtgctt cctcttttgg  1500

ctctaaaggc aagttcaagc catgcaggcc ccagcatgtg cattggagcc ttcatttccg  1560

ccccactcct taaccttaat aacacccaaa gccagtctct cttccctgct ctcaagccat  1620

ttttttttct tcttttctg gagacagggt cttgtgtcac ccaggctggc gtgcagggcc  1680

ctgatcacag ctgccagtag ctggaaccac gggggtgtgc caccacgcct ggctaatttt  1740
```

```
ttaattattt tttgtagaga tgaggagtgc cactgtgttg cccaggctgg tctcaaaact 1800

cctgagctca agtgatcctc tcttggcttg gcctcccaaa atgctggggt tacaggcatg 1860

agccattgca cccagcctta agctattttt gaacccattt gggattcatc cctgttctcc 1920

ccagaaagcc tcatgtgagt cataagcctt tacatattct ctctgtgcat gtggggctgt 1980

caccagtttt gaaaaaccag gttttggggtg gggaatctat ctcgtatctt tgggtaatat 2040

cacagataaa tacagcagac attaacattt tattcagtaa ccactgacag taggggaaag 2100

agctgagctc cattctgatt tgtgcagtga tgatcgggct ttttttcttt ttttggtggt 2160

tggatatttt ataccttctt tttccccaaa tactctccac tgaatgtagt cgactggtga 2220

ttttaaaggg ggaatgaggg agtatggagg ggtatgagtt ggggctcagt agagttgggg 2280

atgtgaaaaa ttacaaggga ccagtgtaaa tgtgatgagg ccagcggtgt ctgcctgctg 2340

gcaatggtca aagttagatt ccatcctccc acagagactg ggagacagag gccttatctt 2400

tcccaatcac tacatttcaa agcaatggct ccttgagaaa gcaatgttcc ttgagaaaga 2460

cacttcttag ctgtaggaga tacacacttg catacacata cacaacatgt gtatcacata 2520

aacatctcaa agggacagag gacagattca taattgtaag tccttttttag taaatgctct 2580

taagagaggg cggtcaggag cctatggtca gatattggca agaatagtaa gttatcctgg 2640

cagcactgag atttctcagg caggcatttt aatggtgggg acaggggtca tcctgggaac 2700

acaggctatg ctactagaag ccatgccaat ttgtctctca gtgcagagtt tcagatggag 2760

ttatggggggg agagttctgc agttctcagt aaccacaaca gtatatatca ctggaagatg 2820

aagcccacac aactacagat gttactgttt ctgagtgagc cgaataacaa acttacagtg 2880

agcagtcacc aacagacaga agtgatgtga ttggttactg atcatgacat gcatttgtta 2940

ttaatgtgat gatgtgtaga ctgaagagct agcagcctgc actttatgcg aaaactcagt 3000

taatatactg tgtacctgaa atttgagttg tgtcgttggg ggactggtgt tattaaatca 3060

tggtgactga aattcgtgca tatcagaact gtaccaagca agggctgcct gatgagtata 3120

atgctctcat gttttatggg aatttatata aatttaaaat aatatgaata aatatttgaa 3180

agttgtatgt tatgcacaag gtttgaaata atgcaattct tttaatattt taaaaaattg 3240

ttaggactca gattttcttt tatcttttct tttttttaag gtacggagtc tcgctctgtc 3300

gcccaggctg aagtgtagag tgcagtggca tgatctcagc tcattgcaac ttccacctcc 3360

tgggttgaag caattcttct gcctcagcct ccggagtagc tgggaataca ggtgcaggct 3420

gccacgcccg gctcattttt gtgttttagt agagataggg tttcaccatg ttgcccaggc 3480
```

tggtctcaac tcctgagctc aggcaatcct cccgccttag cctcccaaag tggtaggatt　3540

acaggcgtga gccactgcac ctggccctcg actcacagat tttcaaaata cttttgaaca　3600

gtaagctgag gacagtgttt attatgacta cactggtctc ctttcactag ctcacaaaat　3660

ttaactacat cacttgtcag tctcctaaaa atgcagtgta tgtgctttga aacttgtgaa　3720

tgatctgctg atttgtgcta ttttatattc aatgttgttg aaagaatagt ttttaaacca　3780

agtaatgcaa aaatttagtg taacatgaat gcttgtgctg taaaacatac tggaaaatca　3840

atagctctgg aataaacttt ggattttt　　　　　　　　　　　　　　　　3868

<210> 799

<211> 2651

<212> DNA

<213> Homo sapiens

<400> 799

atcacagtgg ggttccatag atgatggtcc tgtcatatca gggttcccat tgaaggggggc　60

cctttttggc actttctttt attccattag tctgtttgcc tggtcacaca ttttattgct　120

ttttcccgca aaagaatcaa tgtgggaatt tatttattta tttattgaga cggagtctca　180

ctctgtcacc caggctggag tgcagtggtg caatctcagc tcactgcaac ctccgcctcc　240

ctggttcaag caattctcct gcctcagctt cccaagtagc tggaattaca ggcatctgcc　300

accatgcccg gctaattttt tgtatttttt gtattttttt ttttttctga gatggagtct　360

ctctgtgttg cctaagctgg agtacagtgg cgtgatctca gctcattgca acttctgcct　420

cccaggttca agcaattctt cctgcctcag cctcccaagt aggtggaatt acaggtgccc　480

actaccatgc ctggctaatt tttgtatttt ttagtagaga cgggatttca ccacattggc　540

cagattggtc ttgaactcct gacctcatga tccacctacc ttggcctccc aaagtgctgg　600

gattacaggt gtgagccact gcacctggct gatttttat attttttagta gagacgggtt　660

tcaccatgtt agccaggatg gtcgcaatct cctgacctcg tgatccaccc accttggcct　720

cccaaagtgc tgggattaca ggtgtgagcc actgcgccca gccaggaatt tattttttaaa　780

ttaaatttga tttatttagt ttcctaaccc ttttattgtt tttaggcaat ttttgaagt　840

ataatatgaa taagaaaatt atggtgaatt gttacagcat cgagacctcc aagaccagga 900

catagaacaa tcccagcccc cagaaacctc caccccataa ggctccacaa cccctcttct 960

aacacacaga ttaccttcag ctcttcttga acttcatata agtgtgaaac tcacccatgc 1020

tgttgaacac agcactgttt cattcatgta agcggcctta tagtattcca ttatgtgaac 1080

gcagtttatt atccgttctg ttaatcacag tagtttttac ctgttgtgag taagggtgtc 1140

acaaacagcc tcatgtgtac tttgtggcag atggaattct tgtacagatg tggaacatac 1200

actggatttg aagtgctggg ttatagagta tgcacatgct cagctttatc aaacagggct 1260

taacagcttt tcagagtggc tgtgccaact cacactctcc aacagtctat gggagttcca 1320

gttgccccac acccttgcca ccacttgcaa ttgtcagctg taaattttag ccattttgtc 1380

gggtgtatat tggtatttta ttgtgttttt gatactcgtt gctcccgcaa tcattgaagt 1440

tgagcacggt tgtatatgct tattggcaat ttggatactg tctttgcgtt ttcaaaaatt 1500

gggttttttgt ctttattga tttgtagaat ttctttattc tgaatttgag ttcttagttg 1560

tgcttgtgtg tgtgcacata gtaaacacac acacaggtta aaataattgg gagatcatta 1620

gaatgagatg accccagcgc cttgggtttc aactcaagca aaccaaagtc catctcagtg 1680

tacatggtta tagttcaggt aagcagaaac caccagctga tctctaacac ggggcttttg 1740

actggaatga tttctttccc tttctttctc tttctttctt tctctcttc tctctttctt 1800

tctctcttc tctcttcctt tctttttttc tttcctatct ttctgccttt ctttccttcc 1860

ttccttccat ccttccatct ctttcttttt cttttctctt tcttttcttt ctctccctct 1920

ctctttcttt cctccctccc tttcttcctt ccttccttct ttccttcctt cccttcctcc 1980

ttccctcctt cccctccctc cctaaaattc atagaataaa aaaatgcctg aatagccaaa 2040

gtaatcctaa gcaaaaagaa caaagctgga ggaatcacat tacctgactt caaattatct 2100

tacaaggcta tggtaaccaa aacagcatgg tatttaggat tgttttccca attctttgaa 2160

aagcgatgtt ggtatcttca taggaattgc attgaatctg tagattgctt tgggtagtgt 2220

ggtcactttc acaatattga ttcttccaat ccatgatcat gggatgtatt tccgttggtt 2280

tgtgtcatat acaatttctt tcagcagtgt ttgctaggtc tccttgtaga gatatttcac 2340

ctcttggtca agttatttct agttatttta ttttacttt tgcagctatt gtaaaagagc 2400

tcgggttctt gatttgattc tcagcttggt cattgttggt gtatagcggt gctactgatt 2460

tgtgtacatt gattttgtaa cctgagactt cactgaattc atttatcagc aattcattca 2520

tttttagagg atacttggtc catgcacatg tcagagattg ttgtaatgtt tctttcttgc 2580

aatgatctca tcacatttta atcacaaagt caggctagtc ttttaaataa agttgcaaag 2640

cattaatcat t   2651

<210> 800

<211> 2371

<212> DNA

<213> Homo sapiens

<400> 800

gcaacatctc ctgagaagca ctctcccttg tcgtggaggt gggcaaatct ttatcagcca 60

ctgccttctg ctgccaggaa gccagctaga gtggtcttta aagaaaactg ggcatctcct 120

gctacttaaa atcaaaaact acctaaaata aagattataa aaaagtaagg atgaatggac 180

ggtctttgat tggcggcgct ggtgacgccc gtcatggtcc tgtttggaag gacccttttg 240

gaactaaagc tggtgacgca gcgcgcagag gcatcgcccg gctaagcttg gccctggcag 300

atgggtcgca ggaacaggtc attaatagca tctgggctct atggctacaa tgccaccctg 360

gtgggagtac tcatggctgt cttttcggac aagggagact atttctggtg gctgttactc 420

cctgtatgtg ctatgtccat gacttgccca attttctcaa gtgcattgaa ttccatgctc 480

agcaaatggg acctccccgt cttcaccctc cctttcaaca tggcgttgtc aatgtacctt 540

tcagccacag gacattacaa tccattcttt ccagccaaac tggtcatacc tataactaca 600

gctccaaata tctcctggtc tgacctcagt gccctggagt tgttgaaatc tataccagtg 660

ggagttggtc agatctatgg ctgtgataat ccatggacag ggggcatttt cctgggagcc 720

atcctactct cctccccact catgtgcctg catgctgcca taggatcatt gctgggcata 780

gcagcgggac tcagtctttc agccccattt gaggacatct actttggact ctggggtttc 840

aacagctctc tggcctgcat tgcaatggga ggaatgttca tggcgctcac ctggcaaacc 900

cacctcctgg ctcttggctg tgccctgttc acggcctatc ttggagtcgg catggcaaac 960

tttatggctg aggttggatt gccagcttgt acctggccct ctgtttggc cacgctattg 1020

ttcctcatca tgaccacaaa aaattccaac atctacaaga tgcccctcag taaagttact 1080

tatcctgaag aaaaccgcat cttctacctg caagccaaga aaagaatggt ggaaagccct 1140

```
ttgtgagaac aagccccatt tgcagccatg gtcacgagtc atttctgcct gactgctcca 1200
gctaacttcc agggtctcag caaactgctg ttttttcacga gtatcaactt tcatactgac 1260
gcgtctgtaa tctgttctta tgctcatttt gtattttcct ttcaactcca ggaatatcct 1320
tgagcatacg agagtcacat ccaggtgatg tgctctggta tggaatttga accccaatg 1380
gggccttggc actaagactg gaatgtatat aaagtcaaag tgctccaaca gaaggaggaa 1440
gtgaaaacaa actattagta tttattgata ttcttggtgt ttagctggct cgatgatgtt 1500
aacagtatta aaaattaaac cccataaacc aactaagcct tatggaattc acagtcacaa 1560
aatcgaagtt aatccagaat tctgtgataa gcagcttggc ttttttttta aatcaatgca 1620
agttacacat tatagccaga atctgtatca cagaggtgca agttgacagc agagctcagt 1680
ccccacttcc tgcaaacaat ggcctgcacc ctatcccttg tgtgtgtgac attctctcat 1740
gggacaatgt tggggttttt cagactgaca ggactgcaag agggagaaag gaattttgtc 1800
aatcaaaatt attctgtatt gcaacttttc tcagagattg caaaggattt tttaggtaga 1860
gattatttt ccttatgaaa aatgatctgt tttaaatgag ataaaatagg agaagttcct 1920
ggcttaacct gttcttacat attaaagaaa agttacttac tgtatttatg aaatactcag 1980
cttaggcatt tttactttaa cccctaaatt gattttgtaa atgccacaaa tgcatagaat 2040
tgttaccaac ctccaaaggg ctctttaaaa tcatatttt tattcatttg aggatgtctt 2100
ataaagactg aaggcaaagg tcagattgct tacgggtgtt atttttataa gttgttgaat 2160
tccttaattt aaaaaagctc attatttttt gcacactcac aatattctct ctcagaaatc 2220
aatggcattt gaaccaccaa aaagaaataa agggctgagt gtggtggctc acgcctgtaa 2280
tcccagcact ttggggagcc caggcgggca gattgcttga acccaggagt tcaagaccag 2340
cctgggcagc atggtgaaac cctgtatcta c 2371
```

<210> 801

<211> 2840

<212> DNA

<213> Homo sapiens

<400> 801

```
tttttaatat ggctactaaa aatgaaaaat tccacacgtg gcctgcatca tcttcctggt    60

ggacagtgct gcctgagagt tccctttttg cgcttcctag tgagctagtg atcgacttta   120

cacctggtcc ccttgtgatg ggaaaccctc tgttgaaaca gcagggtcct cgcctcactg   180

gaccgggact cagaccaggt ggaaatgatg atttcacact catggccaag ctgcctctca   240

ccccagatgg aggaagtgaa agttccagcc tttgcggtta ttgtggatta aaagcaaaaa   300

gattttcgtg gaggcgccac caaagcctga agtgtacccg gtgggcagga ccctccacag   360

gcacctccac gccccactcc tgccctgtgc ccgtaatccc agcactttgg gaggctgagg   420

cgggcagatc acttgaggtc aggagttcga gaccagcctc gccaacgtgg cgaaacccca   480

tgtctactaa aaaaatacaa aaattagctg ggcgtggtgg tgcacacctg tagtcccagc   540

tactcgggag gctgaggcag gagaagtgct tgaacccggg aggcggaggt tgcagtgagc   600

tgagatcctg ccactggtct ccagcctggg cgacagagca agactctgtc tcaaaaaaac   660

aaacaaacca aaaaaacaga aacaaaaaca aaacaaaac ccccaacaac tcctggggac   720

tggacctgaa ggggtcttca gagcgttaag caggacacgg agggcaggtg agcgagctga   780

ggggcaggag ccatggggag cccccaacag aacctgctac tcctgcagca acgtttgggc   840

agaagaaaat cctcaaataa aacctccaag aacgtgcacg ccagtcaccg ctcatctcgg   900

acacgtttat tgctagaatc aggtcttaag ttctaaagcg ggtcagaaat atcccgcagt   960

gaggaaatgt tgtaatcatt gtaaaaataa ttagcaggtg actaagatca tgaccacaac  1020

tgacaaagac gtgtgcagat cccacgaaaa taggaacatt tgctcgactg tcaactttac  1080

aaataaaatc gggctccaac ccaggagtgg ccgaggggca ctggcgaggg aagggctgtc  1140

ggcgctgccg cccgatgcct agcacgactg agacccctct gccacatggc ggggacgcgg  1200

ggttcccacc gcgtggccga gcagaaattc cttgaacttc tcccccatcc aaggaattgt  1260

ggcatctcgg agggctggac cggcacacgc cggctcagga gggtgccagg gtctgggaat  1320

gttctcttca caacagaaca ggaatgtaca gtcagcttct gtaaagtgct ccgatactca  1380

gtacaaaaat acaaacact gatgataaac atggcacaca tgggatctga cggggggcgg  1440

acagcgtcgc tgatggccag ggaccgggct gggcagagtt gaggtcgtcg aggggccag  1500

gagcctgggg acacctggcc actgtgttct caggaccttg tcaccaatgg gctgtatggc  1560

tgtggggctc tggttcccgg ttggcaccag ctcctgcccc gccccctcct gagcccacag  1620

cacccagtgg gcgcctctgc ccaggggagc acttcctgat ggagtttccc ctcccttgtg  1680

cccatctgtc cccgagtggc gggaatgtcc ctgttcactg tattcagcgt cacaggagtg  1740
```

```
cctctgccag cacagtggga gaagggctga atcccccgg gatctgcagt tcccaggacc    1800

ctgggttcgg gagaaggact tggccctggc aggggctcac atgtacccca ctgggaacaa    1860

ggacgatcag ccaggaccca gtcctaccac caatgcttgg ggtgcagaac aaggcttgac    1920

atgggccctt tctccaccgg agctggatcg tggatggatc tcaccaccct gggatgtccc    1980

agcacctttg atgctgccca acacctcctt cctccacccc tccagggaac ggaccgtaag    2040

ctgcaacagc tcactacaag cgaggggccc gcacagcggc cacttgtcca cttgctgcaa    2100

cgtctctagg tgcatcctct gcatgccctg ggacatggcg ctctcgacag tctgtgatgt    2160

gccagccccc acctggaagg tgggacgcca gccctgggag ctcatttccc gggggctgag    2220

gaccctgtgc ccagggtgtg tacccgccct ggctgaagct agaggcccgc tcccccagac    2280

aggctgagcg tgtgaacagc aacggttgcc cttgggaagc agagtttggg aaacagctgg    2340

tttcaaaacc aatgccaagt aaaaaggggc aaaggtcagc ccctttcacg atgggcttcc    2400

aaacccacag aacctgactg gagggccact gatgttccct cagtgggccc tgccccgtgg    2460

ccctctctgc ccatgccccc gtgcctggct cattccctga ccctgaggtt catggtgaac    2520

ctgcgtgggg ctctgtttgg gaagtggatt ctgcctgatt ctggggacag atgctgccga    2580

cgccacctgg cccctcctgg tgccctaacc cttggctcca ctgtcgcgcg gcggctgtgg    2640

agcgtggccc cggccggcag ctccttctca aagcaaggtc tgtcctgtcc tcagctccgt    2700

gcagagccgg caccgttcct cactgcctcg gaaaaacagc tcggagttga tctccccgcc    2760

acccggatgg ggtgctatga tttcagacag ctccctggtt tagttctggc tcaactttcc    2820

attaaaaact ttcctttttg                                                2840
```

```
<210> 802

<211> 3205

<212> DNA

<213> Homo sapiens


<400> 802

cattgcttcg agtcacgacc aggtcttctg tgcttgacag ccactccccc aaagagaaaa      60

ggcagtattg cgcaggcgat gtgtatttcc ttttcgtcac acacatttgc tgtgttactt     120
```

```
gtctgttttt aaaatctaca ttcatgcatg ctgcagggtt ccaagcttga actacccttg    180

tggctggcaa aaggactttt tgacaacaag cgacggatcc tttctgtgga actccccaag    240

atctaccaag agggttggag gactgtgttc agtgcagatc ccaatgtggt ggacctccac    300

aaaatggggc cccatttcta cgggtttggc tcccagctcc tgcattttga cagtcccgag    360

aatgcagaca tttcccagtc tctgctgcag gcaagtaatg ggtgtgaaaa cctgtggtgc    420

tgcacttgtc tcaagagcca gccacagata ctacttttac ccaggacagt gtatgacttg    480

taaatttagt ctgtttttat tccaggtcag cctacagtta cactgtctgt ccattttata    540

tatttacata tatacacaca cacacacaca cacacacaca ttttttttaat atgacttgtc    600

tgccactcct catatttgct tgctacaagt tgaggccagc aggaactcta ggaaatgaga    660

aaagggtgat gatggccagg catggtggct cacacctgta atcccagcac tttgggaggc    720

caaggcagga ggatcgctga gcccaggagt tcaagaccaa cctgggcaac atagtgagat    780

cccatctcta ttaaaaagaa aaaagagaaa aaaagggcta tggtgcatta caggtgacag    840

gcacttagat acacagtccc aggcctggcc taagggttcc tgttggaaat acaagagtta    900

ttgggttgtt tccttccttt gttctggggt tagggcttgg ccctgccatg aactagcaat    960

atgacttggt caagctactt gacctctcta gacatcaatt cacctgtaag aattgatgga   1020

gatgataata gtgccaaaat tatagagttg tggtaaaact atgtaatgcc gtgtaataaa   1080

caataactca tattgttatt acttttccag gacaaaacaa tgttatacat ctgttcccaa   1140

cctttatggt ataaccttat tttaattttt cataattact tttttattct gttactgtta   1200

gaagaaacca tcatttcttc ctcttgggac agaagcattt gctactaatg acaataatag   1260

gtgatgcttc tcaaggagct tgctgtgtgc tagccatttg ctaggtgcat tacatgtatt   1320

cattggtttt cttaacaact tactggattt tcataacaat ccacttcaca gatgaggaaa   1380

ttgaggcatg gcaatgtgca ataacttact tgggtgctag agggaattca gacctccttc   1440

tgagtcctac acatcattct ttcttttcat gccatttaaa tgttctgaga taaaaatgga   1500

tatgactttg tggggtgtga ggtcaaccct gacttgtctt actcccttgt ttcccagact   1560

tttatcggac gttttcgccg catcatggac tcctcacaga atgcttacaa cgaagacact   1620

tcagccctgg tagccaggct agacgagatg gagaggggct tatttcaaac agggcagaaa   1680

ggactgaatg actttcagtg ttgggagaag gggcaggctt ctcagatcac agcttccaac   1740

ctcgttcaga attacaagaa gagaaaattc actgatatgg aagactgaaa gccggaagaa   1800

cacagaatgg ctcctcacag acgtatccct ccgtgtgtcc ttgataggag ctggttgacc   1860
```

ttgtacagaa ccagaatcct gtcccatttc atggcttatt tcctgtggcc atagagagtt 1920

atagggaact ggacatgctg gaggatgtgg gtgtccctgg ctctgtgagt cttccaggac 1980

cgtcccaccc tgctgaccca cagcccaggc cctttaaccc aagaacccat ggccaaggag 2040

aaatcaaagt ccttcctaaa taagaatcac tgccatataa tatatcacag tagagttgca 2100

actgagattc cttgtgtctg ggagtttgga cagcttcaga tgtacagttt cactagccac 2160

aaagcacagg tacaaactgg gtcatcgcct gttcacaaaa tgctctcttg atcttatttg 2220

cctcatcttc ctcatggttg tacagaggat agcaccccac catgccagcc tgacttggag 2280

atatctcctg ctgcctgcct gcagggagtt accccagttt ccaaaaacag tcgcccagat 2340

aaaggaggaa aagggaaagg cagacgaatg gcatggcttt tactaaagaa aagatgttgg 2400

cctcatactc tatactcagg gcttaatgaa ctggaatctg cataactcag cagtcaaccc 2460

agaagggaaa tggttaaact gagcttgtta ttgcctcgga gagcctaaga gcacccgcac 2520

acttaattct actccctgtc tagaaaagct gtcagggagt cgtttggaat tgcaatgtag 2580

ttattaaggg ctgttaacca gcctgcatta catctggaag tcaggacttg ggtgctgact 2640

atgaagggcc ctgttttcaa aatctaacat tgcaagtgta aatgggcaag aagcctccgt 2700

tgtgcttttt tttcctcttc agtaactttt gcaacattat tgcatagaag atccctgacc 2760

atttactagg aacctggtta agcaagcact aatctctttt cctggagatc aaggatgcaa 2820

cctcaggttg agaaagaaac agggttccct gggcccatta gactgtttgc agggcatcac 2880

tgcttccccc tgacacctca caactagcaa aaattgtctt tgtctttgga aattatagag 2940

ggatttgggt atccagattg tgcagatgca aacttaggct gtcttgatgc aaacttagaa 3000

ccacagaaat gctttaaaa tgcctgtttt aagatggaat tgttgttttt ataatttgat 3060

tttagtgcta aataaatgat tggctttgta catgaatatg ttctgtacaa gtgctctttc 3120

actagtacta cagataatca aagctatcag aattgtgtct ttgatcatat ttgacggtaa 3180

tacacaaata aatccatgtt ttagc 3205

<210> 803

<211> 2640

<212> DNA

<213> Homo sapiens

<400> 803

```
ctgtcggccc aggacatcag ccagcccctg cagaacagct tcatccacac agggcatggc    60

gacagtgacc cccgccactg ctggggcttc ccggacagga ttgacgaact gtatctggga   120

aaccccatgg accccccccga cctcctgagc gtggaactga gcacctcccg gccccccccag   180

catctaggag gggtgaaaag ggagcctcca cctcgcccac ctcagcctgc cttcttcact   240

cagaaaccaa cctatgaccc tgtgagcgag gaccaagacc ccttgtccag cgacttcaag   300

aggctgggcc tgcggaagcc aggcctgccc cgagggctgt ggctggcgaa gccctcggcg   360

cgggtgccgg gcaccaaggc cagccgaggc agcggggctg aggtcacgct catcgacttc   420

ggtgaggagc ccgtggtccc ggccctacgg ccctgcgcgc cctccctggc gcagctggcc   480

atggacgcct gctccctgct ggacgagacc ccgcctcaga gccccacgcg ggcactgccc   540

cggcccctgc accccacgcc tgtggtggac tgggacgcac gcccgctgcc ccccccgccc   600

gcctatgacg acgtggccca ggatgaggat gactttgaga tctgctccat caacagcacc   660

ctcgtgggcg cggggggtccc tgccgggccc agccagggcc agaccaacta cgcctttgtg   720

cctgagcagg cgcggccgcc ccctcccctg gaggacaacc tgttcctccc gccccagggt   780

gggggcaagc cgcccagctc cgcacagacc gcagagatct tccaggcgct acagcaggag   840

tgcatgaggc aactgcaggc tccggccggc tccccggccc cctctcccag cccggggggt   900

gacgacaagc cccaggtgcc tcctcgggta cccatccccc ctcggcccac gcgcccacac   960

gtccagctgt ctccagcccc cccgggcgag gaggagacca gccagtggcc tggacctgct  1020

tcccctcccc gggtgcctcc gcgggagccc ctgtcccctc aaggctcgag gacacccagc  1080

cccctggtac cacctggcag ctcccccgctg ccacccccggc tctcaagctc acctgggaag  1140

accatgccca ccacccagag ctttgcctca gaccccaagt acgccacccc ccaggtgatc  1200

caggcccctg ccccgcgggc tggtccctgc atcctgccca tcgtccggga tggcaagaag  1260

gtcagcagca cccactatta cttgctgccc gagcgaccat cctacctgga gcgctaccag  1320

cgcttcctgc gtgaggccca gagccccgag gagcctaccc ccctgcctgt gcctctgctg  1380

ctgcccccac ccagcacccc agcccccgcc gcccccacag ccaccgtgcg gccgatgccc  1440

caggctgcct tggaccccaa ggccaacttc tccaccaaca acagcaaccc aggggcccgg  1500

ccaccacccc cgagggccac tgctcggctg ccacagaggg gctgccctgg cgatgggcca  1560

gaggcgggcc ggccagcaga caagatccag atgctgcagg ccatggtgca tggggtgacc  1620
```

●

```
acagaggagt gccaggcggc cctgcagtgc cacggctgga gcgtgcagag ggctgcccag   1680

tatctgaagg tggagcagct cttcgggctg ggtctgcggc ccagagggga gtgccacaaa   1740

gtgctggaga tgttcgactg gaacctggag caggccggct gccaccttct gggctcctgg   1800

ggccctgccc accacaagcg ctgagatgcg tctggagagc cagagggcct gcctgaagga   1860

atcacctgag cctgtccgtc caccaggagt ggggagatgc ccccatccag tcctggagga   1920

cccgctgctc ctgctgctcc cggggatgga gcaaggccaa ggctgcggga ggctgggagc   1980

cctgccctgc ccatccctcc cgcaccagcg ctgtccctgc acactttggt tcagtcccgg   2040

tgcccctgcc aagatgtgga aggggccggg tgaagacagg cttgagggct gccccagcag   2100

gctctgggta tgacctgcct ctggccctgg tcctgggcgg ggcctgtggg tggagtagta   2160

ccctcaggcc ctgccctggg tgacagactg ggaggaaacc aggctggacc tgggcaggcg   2220

ggatgtgttg gccacaggga gaggcggacc ggcacccggt gggacctcct aggactgggc   2280

cttcttccag ggggcccctg gcagcagctg gggtgtcggg cagaatgtga cttgtggcct   2340

taccatggac ttgaatggga cttggctggc ctcaggatct tgtgcctgga aatagcctga   2400

ggtggctcag gaagtggaga aagggtgcca gaccattctc tggcggggac cagggcccaa   2460

ggccccaggg ctggaaggag accaaggggc agccgccctg gagggacatc agtgcttcct   2520

cttccaccca attcccccac gcggttccat gttttcccac cagcctgttg gcgaagttgc   2580

tgctccggca ttcagtacct gcttcttcca gagaaataaa gttagtttct attttatgtt   2640
```

<210> 804

<211> 4276

<212> DNA

<213> Homo sapiens

<400> 804

```
aataaagcaa gaaagtgggg ggcgggcatg gtggctcact cctgtggtcc taatggtttt     60

ggaggccgag gcagaaggac cgcttgaggc caggagtttg aggttgcagg gagctatgat    120

catgtgactg cactccagtt tggcaagacg ctgtttcagg ggaaaaaaaa aagaaaaggg    180

ggataggaaa ttagggaagt gccaggacca ggcatgagga tatgttttta aatgacaggg    240
```

```
aggattagca cagggaaggc cttaccaaga aggtaattta ttttttagag acagggtctc   300

actcttgccc aggctggagt gcagtggtgt gatcccagct cactgcaact tctgcctccc   360

aagttcaaat gatcctcaca cctcagcctc ctgattagct gggactacag gcacacacca   420

ccaaccctgg cttgtttttt tgtagggatg gggtttcacc atgttgccca ggctgatctt   480

gaactactgg gctcaagcaa tctgcccacc tcggccaccc aaagttctgg gataacaggc   540

gtgtgccact gcacccggcc tggttgtttg tttgtttgtt ttttaaattg attcctgtta   600

aatgctgaca ataggtcaga taaagagttc tcagagtaga cctttggatt taactatatg   660

gaggtcattg gtaatcttgt caaaagtagc ttcttgggag tggtggaggt gaaagcctat   720

ttcagatggg tttcagagag attgggagga gaggcattga gtttagacat ttcttttaag   780

agttctacag aggggggcaga agaagtagaa ggggaatgcc gatgaggagt tggcagagtt   840

ttctataaga tggaagagtt tatgacccccc ctgcccttttt ttttttttt taataatgct   900

actgggaatg acctaggaga aagagaaatt ggcaatgttc tttccttgaa gagggatcgg   960

ccctatatat atgtgtactt ttatgagact ggaggaaagg cagagtacat agatgcttat  1020

gatgacaggt cttagatag tgcaggaact tgtggaagtg ttttttctg aatgcttctg  1080

ttttctcagt gaagtagaat gcacgttcag aatgaagata gggaagtgtt cttagagatt  1140

tgaggacaaa ggagaaggta taaagtcatt atctatggaa gtgagggatt ggactagggt  1200

gcaggccagt aaaacatggc ttgtgaacca aattctgcct gccctgtgtt tttggaaaca  1260

cacaaagttt tgttgtaacc caagcatgct catttatctg ttgtctatgg ctgctttcct  1320

actggaatag ctgagttgaa tagttacaac agaaaccata tggcttgcaa agcatacagt  1380

atttactctc tggcccttta cataaaagtt tgctgacctc cagactaggg aaatctagta  1440

taatttccag gcagccttaa aaactcttta gaagttaatg gtccagaata atgacaaata  1500

gctgattgtt gaatttcact atcttcattg cccctgttag agagttttga gctggaaaga  1560

ccgaactgaa caaaggatgt caatgtatag gtttcttcca caaatactga gctcttgcta  1620

gatgccagat actgtgctag ccttgggaat tcttgctctc aggaagctta caatgaactt  1680

aaacctgatt aaagacaatt catgaatata tgtgtgattt caaatagaga acgacatgcc  1740

ctatattgcc tgaccaaacg gtgcatcatc aaagttattc aaactgtagt agcctgtgct  1800

gtcttacttc tcttcctatt ctgtatcaga tccattgttg ctaccccaat cctatagctc  1860

tttgattcat gtctgttatg tgggtggatg gagaactcac tttattactg ctaccataga  1920

tctgatactt caccacttga atcttgcaca gaaaccagag aagctagcta atgcatgctg  1980
```

```
tagcatttaa aaattccatg tgatacaatt atgtatgatt acatttcagt tttgctatac  2040

tttatatttg gcttgtatga ttaaagtaaa caaagtaaat tccattgtta taattggttt  2100

tgagtgttat aggtttattc aaatccaaga tttgattaca gttttgataa gagtcacagc  2160

ttaacactga tgaatcccct aatgattttg gtaaaaatca ttaagttaag gtggatacac  2220

atcttgtcat atgatcaaat ggtttcgcga aaaatcaata atcagacaac aagatgtgcg  2280

aactcgatat tttacacgac tctctttacc aattctgccc cgaattacac ttaaaacgac  2340

tcaacagctt aacgttggct tgccacgcat tacttgactg taaaactctc actcttaccg  2400

aacttggccg taacctgcca accaaagcga gaacaaaaca taacatcaaa cgaatcgacc  2460

gattgttagg taatcgtcac ctccacaaag agcgactcgc tgtataccgt tggcatgcta  2520

gctttatctg ttcgggcaat acgatgccca ttgtacttgt tgactggtct gatattcgtg  2580

agcaaaaacg acttatggta ttgcgagctt cagtcgcact acacggtcgt tctgttactc  2640

tttatgagaa agcgttcccg ctttcagagc aatgttcaaa gaaagctcat gaccaatttc  2700

tagccgacct tgcgagcatt ctaccgagta acaccacacc gctcattgtc agtgatgctg  2760

gctttaaagt gccatggtat aaatccgttg agaagctggg ttggtactgg ttaagtcgag  2820

taagaggaaa agtacaatat gcagacctag gagcggaaaa ctggaaacct atcagcaact  2880

tacatgatat gtcatctagt cactcaaaga ctttaggcta taagaggctg actaaaagca  2940

atccaatctc atgccaaatt ctattgtata aatctcgctc taaaggccga aaaaatcagc  3000

gctcgacacg gactcattgt caccacccgt cacctaaaat ctactcagcg tcggcaaagg  3060

agccatgggt tctagcaact aacttacctg ttgaaattcg aacacccaaa caacttgtta  3120

atatctattc gaagcgaatg cagattgaag aaaccttccg agacttgaaa agtcctgcct  3180

acggactagg cctacgccat agccgaacga gcagctcaga gcgttttgat atcatgctgc  3240

taatcgccct gatgcttcaa ctaacatgtt ggcttgcggg cgttcatgct cagaaacaag  3300

gttgggacaa gcacttccag gctaacacag tcagaaatcg aaacgtactc tcaacagttc  3360

gcttaggcat ggaagttttg cggcattctg ctacacaat aacaagggaa gacttactcg  3420

tggctgcaac cctactagct caaaatttat tcacacatgg ttacgctttg gggaaattat  3480

gaggggatct ctcagagctt aacaggtatc tggagttcac atgtgcatag ctatttcact  3540

gtataaaaat agattaagat attttgagat tttggtgata tttcctgttt ttaaagtttc  3600

aggggtgtgt ctaattcttc ttggtgctgg tttatttaac agaagtctta gttttttggat  3660

attaatattg tggaaagtta acagagctga tgtctagctg atcaaactca gaattatgaa  3720
```

出証特２００４－３０５９６６１

```
gcaattgtga agctttcgga tggctttaat ggagcagatc tgagaaatgt ttgtactgaa    3780

gcaggtatgt tcgcaattcg tgctgatcat gattttgtag tacaggaaga cttcatgaaa    3840

gcagtcagaa aagtggctga ttctaagaag ctggagtcta aattggacta caaacctgtg    3900

taatttactg taagattttt gatggctgca tgacagatgt tggcttattg taaaaataaa    3960

gttaaagaaa ataatgtatg tattggtaat gatgtcatta aaagtatatg aataaaaata    4020

tgagtaacat cataaaaatt agtaattcaa cttttaagat acagaagaaa tttgtatgtt    4080

tgttaaagtt gcatttattg cagcaagtta caaagggaaa gtgttgaagc ttttcatatt    4140

tgctgcgtga gcattttgta aaatattgaa agtggtttga gatagtggta taagaaagca    4200

tttcttatga cttattttgt atcatttgtt ttcctcatct aaaaagttga ataaaatctg    4260

tttgattcag ttctcc                                                     4276
```

<210> 805

<211> 2805

<212> DNA

<213> Homo sapiens

<400> 805

```
agattatatg gagctgcggg agctgccgcc tggggggaaga gaggtgcagc ttctgctagg    60

tttgtgctct cctcccaggg tctccttggc ttccttcccc aaagcagctc agagctggta    120

tgaggtgagg gtggggggca gccggccagc ctggctgttg acggcaactc cagggcttgt    180

ttcgcgcagc cttgccagca ttacccatcc tcatcagaaa ctggcagcgg cagccacagc    240

tcgggcaggc ggctccagcc ccaggctgga tttgcagaat ctgtcctttg cctccaagcc    300

cagctttcag ctgggagagg gggaagaagg cgcagtggca gcagttcttc tggctctttc    360

tccctttctc tctttctctt tctgtgttca agtcacatta catgggattc tgttcttttg    420

ggacttcgtc atcttttcca atatgtcctg ggacctccgg agctgtaacg gggatgctaa    480

ggacacggtc agtggattat cgtgactgta ctaatgaaag gattcaagct ctcctgcact    540

gccagtaact ccaaccgcag cacgccggcc tgctcgccca tcctccggaa gcggtctcgc    600

tcgccaaccc cgcagaacca ggacggagac accatggtgg agaagggctc agatcactcc    660
```

tcggacaagt ccccgtccac accggagcag ggcgtgcagc gcagctgctc ctcccagtcc　720

ggccggagcg gcggcaagaa ttccaagtct cacaagcgcc tctcaaaaaa aagccagagt　780

tggtataatg tgttaagccc cacctacaag cagagaaatg aagacttcag aaagctcttt　840

aagcagcttc cagacacgga gcgcctcatt gttgattact catgtgcact ccaaagagac　900

attctccttc agggccgact ctacctctct gaaaattgga tctgcttcta cagcaacatc　960

ttccgctggg aaactctgct gacagtccgt ttgaaagaca tctgttccat gactaaagaa　1020

aaaacagctc gcctcattcc caatgccatc caagtttgca ctgattcaga aaagcacttc　1080

ttcacttcgt ttgggggcccg ggataggaca tatatgatga tgttccggct ctggcagaat　1140

gctctccttg aaaagcctct gtgtcccaag gagctctggc actttgttca ccagtgctat　1200

gggaacgaat tgggcctgac cagtgatgac gaggactacg tgccccctga cgacgacttc　1260

aacacaatgg gatactgtga agagatccct gtggaagaga atgaagtgaa tgacagctca　1320

tccaagagca gcatagagac caagccagat gccagtccac agctgcccaa gaaatccatc　1380

accaacagca cactaacatc cacagggagc agtgaggccc ccgtctcgtt tgatgggctg　1440

cccctggagg aagaggcgct ggagggagac gggtccctgg aaaaggagct cgccattgac　1500

aacatcatgg gggagaagat tgagatgatc gctcctgtgc actcccctttc actggacttc　1560

aatgacaatg aggacatccc cactgagctc agtgactctt ccgacacaca cgatgaagga　1620

gaggtccagg ccttctatga ggacctgagt ggccggcagt acgtgaatga agtcttcaac　1680

ttcagcgtgg acaagctcta tgacctcctc ttcaccaact cgcccttcca gcgggatttc　1740

atggagcagc ggcgcttctc tgatatcatc ttccatccat ggaaaaagga ggagaatgga　1800

aaccagagcc gagtgattct ttacaccatc acccttacca accctctggc tcccaaaact　1860

gccactgtca gggagacaca gaccatgtac aaggcgagcc aggagagtga atgttacgtg　1920

atagatgccg aagtcctcac ccacgacgtg ccctaccatg actacttcta cacaatcaat　1980

cgctacacgc tcacccgtgt ggctcggaac aagagccgac tcagggtctc cacagagctg　2040

cgctatcgaa aacagccctg ggggttagtg aaaacgttca tcgagaagaa cttctggagt　2100

gggctggagg actacttccg ccatttagag agcgagctgg ccaaaacgga gagcacttat　2160

ttggctgaga tgcacagaca atctcccaaa gagaaggcca gcaagactac aacggtgcgg　2220

aggaggaagc gtccccatgc ccacctgcga gtccctcacc tggaagaggt gatgagcccg　2280

gtcaccacgc ccacagatga ggatgtgggc cacaggatca aacatgtggc aggttccaca　2340

cagacgcggc atatcccgga ggacacCCCC aacggtttcc acctgcagag cgtgtccaag　2400

ctgctgctgg ttatcagctg tgtgatctgt ttcagtctgg tgctgctggt catccttaac 2460

atgatgctct tctacaaact ctggatgttg gaatacacca cgcagaccct cactgcctgg 2520

cagggtctaa ggctccaaga aaggttaccc cagtctcaga cagaatgggc ccagctctta 2580

gagtcccaac aaaagtacca cgatactgag ctccaaaaat ggagggaaat catcaaatcc 2640

tcagtgatgc tccttgacca gatgaaggac tcgctcatca accttcagaa cggcatcagg 2700

tcccgcgact acacgtcgga aagtgaagaa aagaggaatc gctatcattg acaaggcagg 2760

aacagggtgg ctgcaagagg cctgtgcaat acatgtacat agccc 2805

<210> 806

<211> 3404

<212> DNA

<213> Homo sapiens

<400> 806

aaatcatgat aaaacattgc aggagctgac agacaaaata gcccatatag agaagaatgt 60

aaccaacctg acggaactga aaaaacacac tacaagaatt tcataatgca atcacaagta 120

ctaatagcag aatagacaaa gcggaggaaa gaatttcaga gcttgaagac tggctttctg 180

aaataagact ggcagacaag aatagagaaa aaagaatgaa aagcaatgaa caaaacctcc 240

gagaaatatg ggatcatgta aagagagcga atctaagact gattggtgtc cctgaaagag 300

atggggaaaa cggaaccaat ttggaaaacg catttcagga tatcatctat gagaaattcc 360

ctaacctagc tagagaggcc aacattcaaa ttcaggaaat ccagagaact ccaggaagat 420

actccacgaa aggaacatcc ccaacacaca taatcatcag attctccaag gttgaaacga 480

aagaaaaaat gttaaaggca gctagagaga aaggccaggt cacctacaaa gggaagccct 540

tcagactaac agtggatgtc tcagtggaaa acctacaagc cagaagagat tgggggtcaa 600

tactcaacat tcttaaagaa actccaaccc agaatttcat atctggccaa agtaagcttc 660

acaagcgaag aagaaataag attattttca gacaagcaaa tgttaaggga atttgttacc 720

accagacctg ccctacaaga gctcctgaag gaagcactaa atgtagaaag gaaagatggt 780

taccagccac tccaaaaaca cactgaagta ctcagaccag tgacactaca gagcaaacat 840

```
gtaagcaagt ctgcaaaata accagctagc atcatgatga aaggatcaaa tccaaacata   900

ccaatactaa ccttaaattg taaatgggct aaatgcccca attaaaagac acagagtagc   960

aagctggata aggaactaag atccaatggt atgctgtctt caagagaacc atctcacatg  1020

caatgacaca cataggctca aaataaaaag atggatgaaa atctaccaag caaacggaaa  1080

acataaaaaa gtagcagttg caatcctagt ttctgacaaa acagacttta aatcaacaaa  1140

gatcaaaaaa cacaagaag ggcattacat aatggtaaat ggttcaattc aacaagaaaa  1200

tctaactatc ctaaatacat atggacccaa cacaggagca cccagattta taaagcaagt  1260

tcttagaggc cttcacagag acttagactg ccaggcaatg atagtgggag actttttaac  1320

accccactga caatattaga cagatcattg agacagacag ttaacaaaga tattcaggac  1380

ctgaactcag cactggatca aatggacctg gtggatatct acagaactct ccaccccaaa  1440

acaacagaat atacattctt ctgatcaccg caaggcactt actctaaaat cgaccacata  1500

atcagaagta aaacactcct cgacaaatgc aaaagaactg aaatcatgac aaacagtctc  1560

ttgggccaca gaagaatcaa atttgaaatc aagattaaga aattcactca aaaccatgca  1620

attacatgga aattgaataa cctgctcctg aatgactttt gggtaaacaa tgaaatttag  1680

gcagaaatca agaagttcta tgaaactaat gagaacaaag atacaaagta ccagaatctc  1740

tgggatacag caaaggcagt gttaagaagg aaatttatag cactaaatgc ccacatcaaa  1800

aagttagaaa gatctcaagt taataaccta acatcactac taaaagaact agagaagcga  1860

gagcaaacaa atcccaaaac tagcagaaga caagaaataa caaaaatcag agctgaactg  1920

aaggagacag agacatgaaa aacccttcaa aaaatgaaag aatccagaag ctgtttttt   1980

tttctttgaa aaaagtaat aaaatagacc gctagctaga cgaataaaga aggaaagaga  2040

gaagatttga ataaacacaa tcagaaatga taaggggaat atttatcact gaccccacag  2100

aaatacaaac aaccaccaga gaatattgtg aacacctctg ggcacataaa ccaggaagtc  2160

tagaagaaat ggacaaattc ctggacacac acacctcccc aaggctgaac caggaagaaa  2220

ctgaatccct gaacagacca gtaatgagtt tggaaattga ggcagtaata aatagcctac  2280

caaccaaaaa aatcccagga ccagatggat tcacagctga attctaccag atgtacaaag  2340

aggaactggt agcattccta ctgaaactat ttcaaaaaat tgagaaggag ggactcctcc  2400

ctaactcatt ctatgaggcc agcatcatcc tgaaaccaaa acctggcaga gatacaacaa  2460

caaaagaaaa cttcaggcca gtatccttca tgaacatcaa tgcaaaaatc ctcaacaaaa  2520

tgctggcaaa ctgaatccag cagcacatca aaaagcttat ccaccacgat caagttggct  2580
```

tcctccctgg gatgcaaggt tggttcaaca tatgcagatc aataaatgtg actcatcaca   2640

taaacagaac taaagacaaa aaccacatga ttatctcaat agatgcagaa aaggctttta   2700

ataaaattca acatcgcttc atgttaaaaa ctctcaataa actaggtatt gaaggaccat   2760

gcctcaaaat aataagagcc atctgtgaca aacgcacagc caacatcata ctgaatggac   2820

aacagctgga agcattcccc ttgaaaaccg gcacaagaca aggatgccct ctctcaccac   2880

tcctattcaa catagtattg gaagttctgg ccagggcaat caggcaagtg aaagaaataa   2940

agggcatcca aattggaagg gaggaagtca acctatccct gcttgcagat gacatgatcc   3000

tatatctaga aaaccccgtt gtctcagccc aaaggcctct taagctgata aacaacttca   3060

gcaaagtctc agggtacaga atcaatgtgc aaaaatcact agcattccta tacaccagca   3120

acagtaaagc cgacagccaa atcagcaatg aactcccatt cacaattgct acaaaaagaa   3180

taaaatacct aggaatacag ctaactaggg aggtgaaaga tctctacaag gagaactaca   3240

aaccaccgct caaagaaatc ggagatgaca cacaaaaaaa tggaaaaaca ttccaagctc   3300

atggatagga agaatcagta ttaaaatggg catactgccc aaagcaattt atagattcaa   3360

tgctattccc attaaactac cattgacagt cttcacagaa cgag   3404

<210> 807

<211> 4599

<212> DNA

<213> Homo sapiens

<400> 807

cttcccagat ggactttttt tttttttttt tttttaaga ctgagtgtca ctctgttgcc   60

caggctggag tgcagtggtg tggtctcggc tcactacaac ctccacctcc tgggttcgcc   120

ccattctcct gcctcagcct cccgagtggc tgggactgca ggcgcccgcc accacgcccg   180

gctaattttt tgtatttttt agtagagaca gggtttcacc atgctggcaa ggatggtctc   240

gatctcctga cctcgtgatc cgcccgcctc ggcctcccaa agtactggga ttacaggcgt   300

gagccaccac gcccggcccc cagatggact tttatcactc agcagaattc tctggagatg   360

cacccaggct gttgcaggaa ccagctttgg gaccctggag ggcaagagct caatggcacc   420

```
acaccaccct tcggtgcttg gaacgttgca gagaggcaag gagggtctat ctggcgtgtg    480

aggtcacagg aaagctgacg agccagttac ccgacgtgac cccgaggccg caggcagggg    540

actttacctg cacggcaatc acagacaaga cttccactga gatgcgatta aactcgtcaa    600

agcagcccca ggctcccgtc tgggccaggc ccttgtagat atttccacag gactggaaag    660

ggcgagatgg agaaaggaag agctgggagg gtgacaggga gggcgggcgc tgcaggggcc    720

tccccctgcc tcttcggctg tgttttctct tcccaaagct tgctcaggcc ccggtgcatt    780

ggagccttcc gcaggccagc aggcaggtca gcttactgcc cagggtaaca ccgtggaggg    840

ctggacacga ggaagagcca tcctttcacc cttgcctccc agaccccagg atggggactt    900

cctggagtcc ctaataaggg gcctcagaca agcacattta agttctaaac cttgcatgtt    960

ttactcagcc cttttctttc ttgcgtggag aggagaggga gtcctctaag gcgggatggg   1020

ggcacgtcta gcaggccgga ggctttccct caagacatct gtgtctctct aggccccacc   1080

tgggccaatc agaaggactc gtcccatcta cacctgggat tccaggtgga tgttaagtcc   1140

cttccaggga gatccaactt cagatttcac ttttctaaaa tccaggaggc ggatgtggac   1200

tgcgtggccc tgacagtgaa catgggctgc tggtcccatc ctcagcctca ggaggggggcc   1260

cccagattgt ggggctcaga tcccaagctg gggaggggag accctctgca ggcctagggt   1320

ccaaaactca gggttccatc ccccttgcct tcccgtcttg caagaggctg ctgcagcctg   1380

gagctccgag gtatcccctt cccctccctg gcctcctgtg agccgacgat gtcctgtgca   1440

ggctctaatg actgatggga ccgggccaat cccctgctcc cctcccaaac ccacctggac   1500

actgcttgta ccccaccca tgctgaacca tgagggaggt gctcacccct gtgcggagtc   1560

cccagttcgg ggcaatctta acaactgaaa ttgagagagg gtcacctcca gggcaggggc   1620

tggggcagga catttggggc tgcgtctgtc caccctggaa gtctttccag agggaccacc   1680

tgaggggggat gctaccagca agtggggggcc ctggcacctc ctctccagtg ccattcacag   1740

gtatccagag atctggagtt tactgtgggg cctcggagga cagggtgcta ggatctgctt   1800

ctataaaaga cgactctggg tgcctcctcc ggaccccggc cgcgtacctt gtagtccatc   1860

tgctcggagc agttgaagac gtagaccatg gtgcccaggg ctctgcccag gtccttggtc   1920

gtctcagtct tgccggtccc agcgggggccg gcgggggctc cacccatgat gagatggagg   1980

gactgggtca gggtgatata gcacctgcaa gtgaccacag gtaagcgtgt gtgccagtga   2040

ccccatggcc tccctgcttt tatttttttg agacagagtc tcactctgtc acccaggctg   2100

gagtgcagtg gtacaatctt ggctcgctgc aacctctgcc tcctgggttc aaatgattct   2160
```

catgcctcag cctcccaagt agctgggact ataggcgccc gccaccatgc ccggctaatt 2220

tttgtatttt cagtagagat gaggttttgc tatgttggcc aggctggtct tgaactcctg 2280

acgtcaggtg atccacccac ctcggcctcc caaagtgctg ggattacagg catgaccccc 2340

aggagacaca tgggagaggg cagaaaacct tcaggtgtga aggaggaacc acaaccgtgg 2400

agcagaggca gcccaggtgc ctttcccacc tgtggcattc agggaggtgg gcactgctac 2460

gacaaccaga gtctgctcat gagggtccat aaaacatgac cccaactcag caggcccaca 2520

gaggggtgca ggaactctcc caaggccaca cagccggtgc tagaacaagg acacggtggt 2580

agaactgaat gtgaacacag gtccacctga cgcaaatgcc cagtccttcc agcctccaca 2640

gctgacctcc aagtcggaca gttccaagaa tcatgcggaa gggacccacc aagagcacat 2700

gtgagttact cagggacggg cctcacctgt cagtgagtgg ggtgatgacc agccgcggcg 2760

tgttgcccag atactcatag gaatactgga tttgggcatc gcagatgttg gcaaagcagt 2820

gtcgcttctc ttcgtcccag cgatgccgga gctgggcctg ccaggtgaag gcctgagaac 2880

tctccacctg caggatgagc cggagctctt gttgccaggt ggaatacaag agctagggct 2940

gcctaaggaa ggccagcatg cctccaaggc cggtcccctg ctgcccaggg aaccctccct 3000

ggccctcttt ccccctccag cacccacatc caactgtatg gccaccctca gtggaatctc 3060

gctacagaat ggcacttcca atgggcgggc accgctcatc tgactgctgt gtgttgctca 3120

ccaggggtga gtccgggcaa ggaggttagg aggcagctgc agccagcaac agagtcagtg 3180

ccccaggaag aggaagtggc agggtctgaa gtccctgaat gcactgccct gaacccggcg 3240

tccccttgcc cttcccctgg cccctgggac aggggcgctc atgccttggc cacgatcatt 3300

ttggccacca cgtcccgtgc gtgcacatcg atggtgcaga tggtcatgat cttcatcctg 3360

tcgccagcgt tgaggttccc aatgagcagc gtgatgagta cgttcagctg gctaatctgc 3420

gggggagagt gccttcgatg agacaccacg ggtgcccaca tgcactgggg ggtcttgtgg 3480

ctgggtgccc acagctgcat agggaacacc accatgcttt tgtttacagt aatgaaaaac 3540

aagagcgccc tcggtaggcc ccagccaggc actggtttca ccagggtgcg ccctgatgg 3600

gacacctggc agtggctagc atggacgtag tagaaggaaa ttcaaggcca cgagagaggg 3660

tggatgagaa gcaaaaacag ctgactttaa cgccatccag agtctgtata tttttacata 3720

taaatcaatt atacacacac agagtaacag gttgcataag ggccctgcag tgtcatgctt 3780

gggttgtgga attacaggta aattctcctt cttttcaaga tgatcttttg tttccatatt 3840

tctaaccaag gacatttttt ttttaaagac tctcagtagc atctgccaat tttcaggcga 3900

```
gaaatcaaag tacatatttc tgaaggtgtc tgttactcgt ggggagaggt gcctgggggct    3960

gtggtgcgtg gctgttattt ggcctgtgga aacgacggtt ttgcggggct cagcctccga    4020

gaagaagccg ctccaggtac tcgcccggca ggtttcagaa ggatacacgg gcccatgcac    4080

ctgctttttа aacaagtttt aaaaacgtaa ctaactacac actagtaaca cacctgcttt    4140

ttgttataat ctttgatagc gttttcatag ccttcctcca gcctggcaaa tgccaggccc    4200

acctcggtcg tccaccagat ctgggtgcaa gtcagggcca cctgaaagta cataccccc    4260

attgcccacg cagtgagcga tcgctggcgc ctgctaacgc agacattcct gctgaaagct    4320

tagatggttt tccaggggac cacagttaac agcggagccc atgaacgcaa agaaactcgc    4380

cccttatctc agccacgagg cgccgccgag cccccacccg cctcagacct gggctgggta    4440

gtccaggatc cactgctccc tcggcttctc ttcgtaggtc accacggcct ctgggatttc    4500

gtgccggagg gtagagcaca ttcggtccag cactcgattc agccacactt ccacctgggg    4560

acgggagcca cggtgaccaa tacagccatg tgtgcctgc    4599
```

<210> 808

<211> 3024

<212> DNA

<213> Homo sapiens

<400> 808

```
gaaaaaagat tttagtactt ccaggaaccc agtggaataa aaactgatgt gtgtgacagt    60

ggaggctcgg gacctctact cttgcctttg ctctaaggtt gggtctgact atgggcccac    120

tgcctacagc tgtatggata gcacagggca caaagatgcc agccagggag ggcaaatgag    180

agttgaaagc cagcccacac tccatttgcc aagccttgcg ctgcagcacc acatccaccc    240

agaggggget gttctcattt gcattgtgca aaggcagtgt ctggggccaa gaatggccct    300

gctgcgtgga ctccagacct cttcctgggc ttttgcattc ctgtgttcct ctctggttct    360

tgcatagtag aggttttctc tggcctggtt ttggaggagc attatattga tatctggtat    420

agttcactga atattttctc tgcgtgcatg tgtgtgtgta cgtgcatgtg tgtgtgtaca    480

ggggcaggag attaagtgct gctcacatat ggaaatgggc ccttcggctg agcagcactt    540
```

```
cctgttgtaa cagatcaaac cctcttcact gtcgggtaaa gtggaaccac gttttgcttt    600

gcagggcagc atgcgagtct gcttcctgcc acaaatcaca atttgactgc tttctcattg    660

tttcagtgct agttctagcc ttccccgttg ggagccgcct cctgtcctgt tgagcacatt    720

gcaagatctg tgtccttgct cgtgtatcta ctgtgagcac ggtgtcatca ccaccccac     780

aaccctagtg tcagtatgca cttgtgagcc aggaaggacc actgaggtgc ccttgagcag    840

aagtgggtgc tagaccatga gtccagaggc ctacgttctg ctcctacact cccattcact    900

gagcaagtct gggcctcaga tttcccagct gtaagacagg gacaacaatg gcacctacgc    960

cacatggttc ttcatccaca cttagagggg cattgttaac agagacagtt ctcccaacat   1020

tgagcagaaa gcaaggctcc tccaagaggt ccccaaaaca ttgatttaca tgatctggtt   1080

ccctgtccct ccttacctct ccacacacct gcaacccttg tcccctcaaa gcaatatcct   1140

ggttttgcta cattcccatg catccccaag atcattctaa cctgtgatgt tgtgtctgcc   1200

tagagatctc cccatcgacc agccttaaat ccataatgaa aaagaaagat tatggcttcc   1260

gtgcaggagg taatgggacc aaaaagaacc ttcagtttgt tggggttaac ggtgggtatg   1320

agaccacctc aagtgaggag accagcggtg aggacagcac cccagaggac ttgtctgaca   1380

gcgaggcaga gaagaagtgt gacggcccag atcacaagca tgtcaaagat gcccatctca   1440

cctgcgaggc tgggcagggc atccctgagg gcacctgcca tgctgcccag gaaagtgggc   1500

ctggggaaga agtcccccac tccaaggccg agagatataa accctcagaa gaatttctta   1560

atgcatgccg ggcactgagc cagcatctgc cagaaactgg gaccaccaca gaccagctct   1620

tgaggcaaag cttgaacacc atcagtcaag agtggttccg cgtctccagc cggaagtcgt   1680

ctagccctgc cgtggtggcc tcctacctcc acgaggtcca gcctcactcc ccacacttcc   1740

tgaagctgct tgtcaacttg gccgatcgca acgggaacac ggcccttcac tacagcgtgt   1800

cccactccaa cttctccatc gcgaagctgc tgctggagac aggcgtctgc aatgtggacc   1860

atcagaacaa agctggctac actgccgtaa tgatcactcc cttggcttcc gcagagacca   1920

atgaagacat ggctgttgtc tggaagctct aagagaagg aaatgtgaac attcaagcta   1980

ctcagggagg ccagactgcg ctgatgctgg gagtcagcca cgacagggag gacatggttc   2040

aagcgctgct tagctgccag gcagatgtca atctgcagga ccacgatgga tcctcggccc   2100

tcatgctggc ctgtcaccat ggcaacgtgg acctggtgcg ctgctcctg gcacacccag   2160

cctgcgacag cagcctgact gacaaggctg ccgcacagc tttgtccatc gctctgaagt   2220

cacccaccca tatggaaatt gctgggcttc tgagagccca cgcggagcag ggcaggtccc   2280
```

```
tggggctgta ggggctgcag aagaactggc cgtggggaac aaaagccttc ttctctggac   2340
tcctccctcg cccttgaaga gggcagaggt cacaggccag agagccaccc ttctagagaa   2400
gaaactatgt caaatatgca catacattcc tgttgtataa ttctgctcat taggatgctt   2460
tgtagttttt gccttaggcc aagcctgaaa actacacggg cttcagagca gggttcaagg   2520
tgcaaggtga ggggtacgtc ggtgtcatcc aaacatccaa aacatcttca gccttgaatt   2580
cctcatgact ctaccctctg taacattgtg tagcaagcag gcaggcagga gcacattagc   2640
acattagaaa agcaatactt tttacatgga attttacagt gcactatctt tctgtttttt   2700
aagcaagtgt atacaaatat gtcccattga tatgcatgtc tatagatggg aggggattta   2760
agccaacccc ctggcaagca ttctgtaggg gaccctagaa gaatcaccgt gcagactggt   2820
gaaactgaac aagcaccatt tgggagcttt gtttcgatgg ggttgacaga gaaatcttaa   2880
aatctgacag ggtagaagaa gcactttggc atcaatgcca tatgtacagt cttgactatt   2940
tctgagtcat ctagtggctc caatttgctc cagggaaatt ggaattaatt aagaaattta   3000
ttatctagta agttgctatg taat                                         3024
```

<210> 809

<211> 2350

<212> DNA

<213> Homo sapiens

<400> 809

```
atatgccttt ttaaaaaaat tatcttttcc attggtgact atgaggttga gagatgattc     60
tcctacattt ctggctgctc ctcttcaagt accttccctg gctcctctgg attttttgt    120
tttgttttgt tttgttttgt tttgtttttg agacaaagtc ttgctttgtt gcccaggctg    180
gagtgcagtg gcaggatctt ggctcaccag ctcactgcag cctccacctc ccgggttcga    240
gggattctgg tgcctcagcc tccagagtag ctgggactac aggcccggct agttttttgta   300
cttttggtag agatggggt ttcaccaggc tggtcttgaa ctcctgcctc gggtgatctg    360
cccgcctcgg cctcccaaag tgctgggatt ctaggcatga gccaccgcgc ctggcctggc    420
tcctcttctt cttccactca gatatgcctg accctgtcaa cactttggtt gaggtcttct    480
```

ttcttctttc tttttgctc cgcacattta gcttatgact tcaaccatca tttctcagag   540

catgggtctg gctcaacctc tctcctgaat ttcagaccta caagtctagc tacttggtgg   600

agacctcccc agaatgacct gctgcttccc aaaagcagac tctccaaatt acagtcagta   660

tctcccccgg aagcattccc ccaggcattt ctctttctgc cttcaattcc ccattctcct   720

acattgcctt gccagaagcc tgctggtcag cttggatttc tttttgtcct tttttttcta   780

tattttgctg gtgcctagtc atgtagttgc tgcctctaca ctttctcttc tttaaaaaaa   840

attattaaag caccacgtgc ttgttgtaaa catttccaga aaatacagaa gtgctcaaag   900

tgaaaaaatg gaaatgcctt gtcccttcct cattccctgc cctaacctca cgccccagat   960

tcagctatgt aatagtctgt catgccaagt cttatttcca gctcctcttt tccatcccca   1020

ctgccatcat ctgaactaaa cggattgttt tccatctggt ctccttggct tttcctttca   1080

gtgcagctca acagacatta atcaagtgcc ttccacacac caaagtccta ccctagatcc   1140

tagaggttca gagacaagta agatagttaa agagatccac attccagagc tgtttaactt   1200

tgggcaagtt acttaatctc tctgaccctt acttccttat ctgtaaaatg atgctaatcc   1260

cagcaccttt ttcatgggtt tggacgagca ttaatgagat gatccatgta aaactctttg   1320

tactaactac ctggtacact gtatctgctc cataaatgtc agtgacaaca atgataataa   1380

tgacaatgtt tggaggagtt tatagcttaa tggagagact taaagcataa gaattatcta   1440

ggcgaagaat gatgagaaaa tattttggga aaaggaaaac aaacagttct actaaaatta   1500

aaaggctgat gtagaggctt gggaaactgg gaggtaagag ctcggactgt gtcctctaag   1560

acagtaattc ccgaagtgtg agcaaaagtc cacctgcatc agtcttactt ggggtgattg   1620

ctcaaaatga ggatttaatg gctgcacctc cgagcaagtt ggtaatttac atatcggaat   1680

gctatccatc aaggaaaatg ggcagactac agttacatgc atcaacacag acaagcttca   1740

aacaatattg agtgtaaaaa gcaagacata gaaatatata tttagtaaga gtaaaaatac   1800

agtaaaggta aaaagaggc aaaactaaac aatatattgc ttaagcaata aggatacaca   1860

aactaatgaa aatcaaagga tttactaata caaacttcag tatagtaatt aattggaatg   1920

ggagagaaag atgcaaagtt tctatttctt tttttgtttt gttttgagac agtgtctcat   1980

tctgttgcca aggcaggagt gcggtggcag gatctcagat cactgcaggc tcagcctcct   2040

gggttcaggt ggttcttctg cctcggcctc ccgagtggct gggattgcag gcatgcacca   2100

ccacgcccgg ctgatttttg taattttggt agagatggag tttcaccgtg ttggccaggc   2160

tggtctcgaa ctcctggtct taagtaatcc gcccacctct gccatcaaag tttctgtttc   2220

ttaagttggc tgccgagtac acaggttttc tttgtaaaat aattatttaa attgttaata 2280

tgcattactt atatgctttt catttacaat gtatttcaca agaaaaataa aacaaagcaa 2340

ataagaaaac   2350

<210> 810

<211> 3276

<212> DNA

<213> Homo sapiens

<400> 810

taatgctcgt gagaaacctt atgaatgtga agaatgtggg aaggtcttca gttatcctgc   60

aaaccttgct caacatggga aagttcatgt tgagaaaccc tatgaatgta aagagtgtgg   120

ggaagctttt aggactagcc gtcaacttac tgtacatcat agatttcatt atggtgagaa   180

accctacgaa tgtaaggaat gtggcaaggc ctttagtgtg tatggacgac ttagtcgaca   240

tcagagtatt cacactggtg agaagccctt tgaatgtaac aaatgtggga agtcctttag   300

gctcaaagca ggccttaaag tacatcagag tattcatact ggagagaagc cacatgaatg   360

taaggaatgt ggaaaggcct ttcgtcagtt ttcccacctt gtgggtcata aaagaattca   420

tactggagaa aaaccctatg aatgcaagga atgcgggaag ggctttacat gtaggtatca   480

acttaccatg catcagagaa tttattcagg ggagaaacac tatggatgta aagaaaatgg   540

ggaggctttt agtagtggcc atcaacttac tgcacctcat acatttgaaa gtgttgagaa   600

accttataag tgtgaggaat gtgggaaagc ctttagtgtg catggacgac ttactcgaca   660

tcagggtatt catagtggta agaaacccta tgaatgtaac aaatgtggga agtcctttag   720

gctcaattca tcccttaaaa tacatcaaaa tattcatacc ggtgagaaac cctacaaatg   780

taaggaatgt gggaaggcct tcagtcagcg tgcacacctt gcccatcata acagaattca   840

tactggttac aaaccctttg aatgtaaaga atgtgggaag tcctttcgtt gtgcctcata   900

tcttgttata catgagagaa ttcatacggg agagaaaccc tatgtatgtc aagagtgtgg   960

gaagggtttt agttatagcc ataaactcac tatacatcgc agagttcata ctggtgagaa 1020

accttatgaa tgtaaggaat gtgggaaggc ctttagtgta tctggacaac ttactcagca 1080

tctgagtatt cacagtggta agagacccatt tgaatgcaac aaatgcggga agtctttttag   1140

gttcatttct gtacttaaag cccatcagaa tattcatggc gctgagaaac cctacgaatg   1200

taaggaatgt ggcaaggcct ttcgtcatgc cacaagcctc atatatcatg accgaactca   1260

tgctggtgaa aagtcctatg aatgtaaaga atgtggggaa actttttagtc atgcttcaca   1320

tcttattatt catgagagaa ttcataccag tgataaaccc tatgaatgta aaagatgtgg   1380

gaaggcattt cactgtgcct catatcttgt tagacatgaa agcgttcatg ctgatggaaa   1440

tccctatatg tgtgaagagt gtgggaaagc ttttaatagt agccatgaac ttagtataca   1500

tcatagagtt catactggtg agaaacccatt taaatgtaac aaatgcagaa ggtcctttag   1560

gcttagatcc atccttgaag tacatcagag aattcatatt tgatagagaa attgtggcat   1620

atacaggtag taaagaaagc acattgtgtc aatggattta tcccactgaa caatttgaat   1680

gaagacaatg tggaatggct ttgagataca gttcagtttt tattaggcat caatttgtat   1740

tggtgtgaac ttttcaaaat gtaaatcata tatgcagttt ctttggtatg acctgtgtta   1800

actcagattc agagaatttta taatgtattt ttttaataac ataagaaaac ttttctgata   1860

ttcctctagt tttggattgc caaaatattc atagtagagg aaaactgaga aaacgtagga   1920

aaccattctt tatacttgca tgtaaacatc ttccagcaac aatcatttat tgttaaacct   1980

ggaaaaagcc attacacagg aaacctctgt tgatataagc gatgatggga aaggctattt   2040

agccactctg catatttaat gctcatgatc aacatctgct tcctatagct gggatgatat   2100

gggggaagat atttatccct tctggggatc atatataaat gatgatagta gtacctacag   2160

tatagtgctg ttagaattac atgagttaga tgtggaggtc agagtggaag caggtgtgag   2220

agggtcccgc agaagaaaac atggctgcca aagtgtttga gtccatcggc aagtttggcc   2280

tggccttagc tgttgcagga ggcatggtga cctctgcctt atgtaatgtg gatgctgggc   2340

acagagctgc catctttgac caattccgtg gagtacagaa cattgtggta ggggaaggga   2400

ctcactttct catcccatgt gtacaaaaac caattatctt tgactgctgt tctcaaccac   2460

gtagtgcgcc agtcatcact ggtagcaaag atttacagaa tgtcaacatc acactgtgca   2520

tcctcttccg gcccatcact agccagcttc ctcgcatctt caccagcatt ggagaggact   2580

acgatgagtg tgtgctgccg ttcattacca cggagatcct caagtcactg gtggctcgct   2640

ttgatgctgg agaactaatc acccagaggg agctggtctc cagccaggtg agcaacaacc   2700

ttatggagtg agcagccacc tttgggctca ttctggacga cgtgtctttg acacatctga   2760

ccttcttgaa ggagttaaca gacaggtggc cccccaggaa gcagagagcg ccagatttgt   2820

```
ggtggaaaag gcggccatca tctctgctga gggtgactcc aaggcagctg agctgatcgc   2880

caactcactg gccactgcag gggacggcca gagcgagctg tgcaagctgg aagctgcaga   2940

agacattgca taccagctct catgctctcg gaacatcacc tgcctgccgg cagggcagtc   3000

cgtgctcctc cagctgccct agtgaggccc cagcctacct gcacctccgt gaggcaactg   3060

ggccacagcc ccgatgattc gtaacaccac ctttcgccct caccccagaa atcactgaaa   3120

tttcatgatt ggcttaaagt gaaggaagta aaggtaaaat cacttcagat ctctaaaaaa   3180

caaagaatta catgagttag tacatgaaaa aattatggga aactacatga aatatactgt   3240

tacgttcaat aaacattagc ttctgtatat aataat                             3276
```

<210> 811

<211> 4408

<212> DNA

<213> Homo sapiens

<400> 811

```
aagtccccgg agccgaggct tcctccgcgt gagcccggcg agtctggccg cggatgccct     60

gtccggagtg ctccgtgccg ccccaggctt gccagggtcc gcagcgagac atgcccgagc    120

caggcgctgc atcgacctcg acttatctgt aagcagcgga agatcctgaa ggcactaact    180

aaggtatctc caggcaacca aggatcttac ctctcacatt gagaaaaacc ataacttcag    240

agacatttcc tggctccaaa ttcaagtcct ttcagagacc cctctactaa ttattttcca    300

gtaccactct ccatggaata aaaggagttg caaacatggc ctttgtagat gcagggaaac    360

ccacgttcct tttagagctg atgttaaccc atgagaagcg accacccctc gacgacttct    420

ccttcacggt tcccatccag gagcacggcc aactctcccc cggaatccat aacggctcac    480

gcaaatagat ttctttccgt tcctcctcgg agggctctcc acatttatct gctcgagacg    540

tggcagctcc agaaccatgg tcagtaagga caccggcaaa tgcatactca caacatcgga    600

gagtgaagtg gaacccgccg cctgcctggc cctggagatg aaatacgccc tggaccccaa    660

ccggcagatt aaaaaacgga acaaagccct gcaggtgcgg tttaaggata tctgcgaggc    720

acagaatgag cagagggaca cacagctgtc ctcgggccag ctggggggaga agcgggaggc    780
```